REPORT

OF THE

MEDICAL OFFICER OF HEALTH

ON THE

HEALTH

OF THE

CITY OF BIRMINGHAM

FOR THE YEAR **1909.**

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HUDSON AND SON, PRINTERS, EDMUND STREET AND LIVERY STREET.

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HEALTH DEPARTMENT,

COUNCIL HOUSE, BIRMINGHAM,

July 9th, 1910.

TO THE CHAIRMAN AND MEMBERS OF THE HEALTH COMMITTEE.

GENTLEMEN,

I beg to submit in the following report certain statistics relating to the health of Birmingham during the year 1909, together with some observations on these.

The general death-rate was the lowest ever recorded in the City. It may be desirable, however, to point out that the population of the City is probably over-estimated by the Registrar-General, and that, therefore, the death-rate recorded is not quite so low as it is calculated to be. But while this is so, it does not materially alter the fact that the mortality-rate for this City has been continuously declining during recent years, and was lower during 1909 than it had ever been before.

I would desire again to point out that the Birmingham death-rate does not represent the death-rate of the whole of Birmingham proper, on account of the exceptional proportion of the population which has overflowed the boundaries—a part of the population which has a low death-rate. For Greater Birmingham the rate in 1909 was 13·7 per 1,000, and this figure is the one which may properly be used in comparing the mortality of Birmingham with that of many of the other large towns. For instance, the mortality in Glasgow during last year was at the rate of 17·5 per 1,000, that in Liverpool was at the rate of 19·0 per 1,000, in Manchester 17·9 per 1,000, and in London 14·0 per 1,000; so that if the Greater Birmingham figure is used for comparative purposes, the general mortality of our City compares favourably with that of other large centres of population.

With the exception of measles, the prevalence of the communicable diseases was in no instance excessive. The epidemic of measles, however, which terminated towards the end of the spring, was, if not the most severe, one of the most widely spread and virulent from which the City has ever suffered.

Many advances have been made during the year under review in the direction of bettering public health. Particularly is this the case in regard to lessening what is our greatest scourge—tuberculosis. The very difficult question of reducing the amount of tuberculosis in the herds of cattle from which milk is supplied to the City has been attacked. Again, the Sanatorium at Salterley Grange has been opened, and the work in connection with it is producing good results, not only as regards the patients whose lives are saved, but also in the spread of knowledge of the value of open air in the prevention and cure of the disease; indeed, it may be said that the work in regard to the prevention of tuberculosis is taking hold among the people, and that directly or indirectly such an institution as the Sanatorium is playing an important part.

The definite work in regard to the prevention of infant mortality, which has been in operation for a number of years, is apparently bearing fruit, and I have to record a lower infantile mortality rate than in any previous year.

I would like to express my opinion that the passing into law of the town planning section of the Housing, Town Planning, etc., Act is one which is likely to constitute a landmark in our public health legislation. I anticipate that great value will accrue from this legislation in the future.

There are several matters of great complexity and importance which require serious attention. Among these is that of the general dirty habits of a considerable proportion of the poorer classes. Not only do they allow themselves and their children to remain in a condition of filth from want of washing of the body and clothes, but their homes are dirty, and as a result a considerable proportion of them are verminous. At the present time the public generally do not recognise the amount of harm which is done by the dirty and careless members of the community. They spread vermin to the clean members, and in many cases by their dirty habits suffer from

disease, which also spreads to the clean members, so that there is in my opinion a real necessity for an effort to be made to punish dirtiness of this character, which everyone will recognise to be entirely unnecessary, and due to carelessness and indifferenee.

It is probable also that a good deal of disease is carried by the ordinary domestic fly. Here again the prevalence of large numbers of flies indicates the presence of accumulations of decomposing filth, because without such filth flies cannot breed. A very common variety of filth in which flies breed is to be found in the stable manure pit. It is hoped that if sufficient evidence is obtained, much more drastic powers will be asked for in dealing with the storage of stable manure, and, indeed, any other decomposing substance in close proximity to dwelling houses.

In conclusion, I would like to report that the staff of the Health Department remains in my opinion a particularly efficient one. All the officers have carried out their duties during the year with exemplary conscientiousness, and I would further add my thanks to your Committee for your courteous and kindly consideration shown to the members of the staff and myself during the year.

I am, Gentlemen,

Your obedient servant,

JOHN ROBERTSON.

POPULATION.

Population

The estimated population of Birmingham on June 30th, 1909, was 563,629, an increase of 5,272 over that for 1908. This is the figure prepared by the Registrar-General, and as it is used for many purposes other than those of local health statistics, it has been thought desirable to accept it rather than to make an estimate based on local knowledge. It is probable that this estimate is between 35,000 and 40,000 in excess of the actual population of the City. This opinion is based on the result of local knowledge and a comparison of the number of occupied houses at the time of the last census, and during the year in question. As has been pointed out in previous reports, there has been a very desirable spreading of the population of Birmingham into the areas immediately surrounding the City, which are not at present governed by the Municipality, and this has prevented the City population from increasing at as great a rate as it formerly did.

An error of between 35,000 and 40,000 in the estimate of population in the City of Birmingham would produce an error in the death-rate of about 1·0 per 1,000, that is to say, the death-rate for 1909, which is on the Registrar-General's estimate 15·5 per 1,000, would, if based on the local figures, be 16·5 per 1,000. It must be considered a serious matter that all our local and national statistics should be liable to so gross an error as the result of the want of a five-yearly census. There is a Bill before Parliament at the present time giving power to the Local Government Board to take the next Census on April 2nd, 1911, but this Bill does not make any provision for the taking of a partial census in 1916, notwithstanding the fact that various Government Departments and nearly all the sanitary authorities in England are asking for it to be done in the interests of the health of the community, in addition to the numerous other authorities which would be benefitted.

Occupied Houses.

In the table on the opposite page is shown the number of occupied houses in each ward of the City and in the City as a whole for each year since 1897. The table also shows the increase or decrease in the number of occupied houses during each of these years, and it will be noted that during the early years of the period there was an increase equal to about two per cent., while during the past year there was a decrease of one per cent. These figures coincide with our local knowledge of what is actually taking place in the City, and probably may be taken as a correct indication of the migration of the population from the City to the suburbs.

OCCUPIED HOUSES.

Ward.	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	Increase or Decrease in 14 years, 1896 to 1909.
Rotton Park ...	8615	8739	9079	9442	10199	10041	10215	10383	10573	10761	11065	11028	10767	+ 2413
All Saints' ...	7853	8075	8549	9028	8847	8939	8996	9195	9024	9084	9393	9311	9243	+ 1416
Ladywood ...	5692	5605	5639	5645	5627	5634	5662	5669	5570	5539	5564	5561	5438	- 265
St. Paul's ...	3718	3688	3650	3630	3187	3316	3318	3341	3314	3217	3088	3009	2825	- 937
St. George's ...	4572	4585	4670	4632	4572	4623	4618	4621	4604	4627	4543	4401	4240	- 337
St. Stephon's ...	4741	4864	4913	4882	4963	4952	4962	4930	4861	4809	4859	4683	4598	- 151
St. Mary's ...	3262	3205	3230	3237	3308	3325	3378	3297	3233	2888	2783	2480	2569	- 605
St Barth'lmew's	5134	5119	5315	5326	5297	5301	5241	5089	4884	4865	4545	4489	4347	- 848
Market Hall ...	2363	2362	2372	2335	2109	2094	2075	2005	1980	2068	1954	1929	1920	- 509
St. Thomas's ...	4056	4030	4088	4170	4201	4067	4061	4106	4062	3958	3799	3816	3775	- 275
St. Martin's ...	5163	5170	5216	5260	5220	5250	5233	5331	5373	5213	5254	5109	4946	- 204
Edgb'n & Harb'e	5863	6056	6289	6373	6386	6473	6496	6491	6432	6801	6891	6825	6868	+ 1134
Deritend ...	5305	5415	5370	5248	5232	5194	5101	5118	5026	5036	4911	4819	4632	- 637
Bordesley ...	10231	10869	11179	11514	11703	11907	12168	11905	12519	12809	13069	13280	13277	+ 3865
Duddeston ...	4921	5240	5082	5132	5060	5026	4977	4958	4946	4847	4873	4688	4588	- 207
Nechells ..	6771	6869	7036	7021	7012	6955	7023	6947	6841	7020	6732	6821	6712	- 45
Balsall Heath ...	8250	8419	8547	8650	8700	8750	8825	9000	9061	9183	9029	902$_7$	9030	+ 830
Saltley	6188	6764	7242	8053	8340	8715	8960	9223	9333	10019	10557	10634	10959	+ 5239
City ...	102698	105074	107466	109578	109963	110562	111309	111609	111636	112744	112909	111910	110734	+ 9877
Increase or Decrease on previous year ...	+ 1841	+ 2376	+ 2392	+ 2112	+ 385	+ 599	+ 747	+ 300	+ 27	+ 1108	+ 165	- 999	- 1176	
Percentage ...	+ 1·83	+ 2·32	+ 2·28	+ 1·97	+ 0·35	+ 0·55	+ 0·68	+ 0·27	+ 0·02	+ 0·99	+ $_0$·15	- 0·88	- 1·05	

Ward populations and areas.

At the last census information was available as to the average number of persons per house in each ward of the City, and by using this figure and the total number of houses in the ward as ascertained by the overseers in 1909, it is possible to arrive at the approximate population of each ward. These are shown in the following table :—

WARD.	Area in Acres.	Population 1909.	Persons per Acre
Rotton Park	1,233	49,421	40·1
All Saints'	532	43,257	81·3
Ladywood	249	24,253	97·4
St. Paul's	264	13,249	50·2
St. George's	120	18,741	156·2
St. Stephen's	169	22,024	130·3
St. Mary's	184	12,357	67·2
St. Bartholomew's ...	313	22,039	70·4
Market Hall	229	8,774	38·3
St. Thomas'	179	17,252	96·4
St. Martin's	468	22,702	48·5
Edgbaston and Harborne	3,407	33,104	9·7
Deritend	279	21,863	78·3
Bordesley	1,387	62,004	44·7
Duddeston	299	21,701	72·6
Nechells	512	32,218	62·9
Balsall Heath	463	40,274	87·0
Saltley	2,352	55,562	23·6

As Quinton did not come into the City until November 9th, no addition has been made to Edgbaston and Harborne Ward on account of its incorporation with the latter. The acreage and persons per acre as well as the population of each ward will be found in the above table. In the City as a whole, exclusive of Quinton, the acreage is 12,639 acres, and on the Registrar-General's estimate of the population there would be 44·6 persons to an acre.

Migration to suburbs.

Comparing the above table with similar ones prepared in previous years, it is found that the central area of Birmingham is depopulating rapidly. It is probable that no large City is depopulating at a greater rate than Birmingham is at present. This is due to the wholesome endeavour on the part of a large number of people to live in more salubrious surroundings, and as an excellent tram service has recently been provided, they are now able to gratify their desire. The effect on the City, however, is a very marked one, as the people who are migrating outwards are those who can afford to live at a greater distance from their work, while at the same time the migration is mainly amongst those young adults who have a better knowledge of the conditions necessary for good health. In this way the City is losing a considerable proportion of its healthiest population, while there is being left behind a large number of its less healthy citizens. Indeed, Birmingham now contains within its municipal boundary nearly all the thriftless, unhealthy, and more or less poverty-stricken people out of a population of nearly one million.

MARRIAGES.

Marriage rate.

The number of marriages recorded during 1909 was 4,509, a decrease of 205 as compared with 1908. The number of persons married is equal to a rate of 16·0 per 1,000 of the population, as against 16·9 in 1908, and 18·7 in 1907. The fluctuations in the marriage-rate during the past ten years are shown in the statement below :—

	Marriage-rate per 1,000
1900	18·9
1901	18·8
1902	19·1
1903	18·4
1904	17·2
1905	17·5
1906	18·1
1907	18·7
1908	16·9
1909	16·0

Only on one occasion since 1880 did the marriage-rate fall below 16·0. This was in 1885, when it was 15·9 per 1,000. The mean marriage-rate since 1880 was 18·0.

BIRTHS.

Birth-rate.

There were 14,985 children born in Birmingham in 1909, as compared with 16,141 in 1908, and 15,619 in 1907. The birth-rate was 26·7 per 1,000. This is by far the lowest recorded in Birmingham. The mean birth-rate for each five-yearly period since 1871 is given below :—

	Birmingham.	England and Wales.
1871–1875	40·4	35·5
1876–1880	41·0	35·3
1881–1885	36·1	33·5
1886–1890	32·9	31·4
1891–1895	32·7	30·5
1896–1900	33·3	29·3
1901–1905	31·3	28·1
1906	29·3	27·1
1907	28·3	26·3
1908	28·4	26·5
1909	26·7	25·6

It will be seen that during most of these quinquennial periods the birth-rate has been showing a decline, and that quite recently the decline has been very marked. The rates for Birmingham for the last few years are, however, under-stated, owing to the population being over-estimated. Thus, if a local estimate of the population for 1909 be taken instead of that of the Registrar-General, the birth-rate would be 28·5 instead of 26·7.

The causes contributing to this decline in the birth-rate have been dealt with in previous reports, and need not be repeated here.

Birth-rates in large towns.

In the towns having a population of over 200,000 persons the birth-rate during 1909 was as follows :—

	Birth-rate per 1,000.
London	24·2
Liverpool	31·1
Manchester	27·8
Leeds	22·8
Sheffield	28·2
Bristol	22·6
West Ham	27·2
Bradford	18·8
Newcastle	27·3
Hull	29·4
Nottingham	25·7
Leicester	21·9
Salford	27·9
Portsmouth	27·2

Birth-rates in wards.

The birth-rate in the different wards of the City varied during 1909 very considerably. The highest rate was 36·6 per 1,000 in St. George's Ward, and the lowest 16·4 in Market Hall Ward, which, being in the centre of the City, has but a small and peculiarly constituted resident population. In certain populous artisan suburbs, such as Balsall Heath and Bordesley, the rate, however, was still a low one.

BIRTH-RATES IN WARDS.

	1905.	1906.	1907.	1908.	1909.
Rotton Park	28·3	28·7	25·2	27·6	26·3
All Saints'	32·1	31·6	30·8	31·7	29·3
Ladywood	28·9	30·5	29·4	30·5	29·4
St. Paul's	26·1	26·1	24·5	26·5	23·6
St. George's	33·9	34·9	34·3	35·8	36·6
St. Stephen's	34·8	36·9	35·0	35·5	35·0
St. Mary's	27·2	29·9	27·6	32·7	29·2
St. Bartholomew's ...	34·6	33·8	35·8	34·0	36·2
Market Hall	23·8	19·6	16·9	16·3	16·4
St. Thomas'	29·5	30·8	32·8	32·6	31·3
St. Martin's	24·4	26·0	25·9	26·4	25·6
Edgbaston and Harborne	19·7	18·6	19·2	20·6	18·4
Deritend	34·9	34·8	34·3	35·6	33·6
Bordesley	27·5	26·6	27·2	26·4	25·1
Duddeston	33·8	37·3	34·5	36·8	32·3
Nechells	36·3	36·1	36·4	38·1	34·5
Balsall Heath	27·0	24·3	25·8	26·9	24·4
Saltley	32·2	32·6	29·3	31·7	28·4

NOTIFICATION OF BIRTHS ACT, 1907.

Notification of births.

This Act came into operation in Birmingham on March 1st, 1908. Previously for a number of years a return of births was made weekly to the Health Department by the local Registrars. The important change which the Act enabled the department to make has been the visiting of homes where a baby is born three or four weeks earlier than had been done previously.

During 1909 the number of births reported under the above Act was 13,771, of which 13,349 were of live born children and 422 of stillborn children. The number of births registered by the local Registrars during the year, which, of course, is not quite the same as the number which actually occurred, was 14,985, and on comparing the two lists it is found that 1,450 of these births had not been notified as required by the above Act. This number represents rather less than 10 per cent. of the total.

It has not been thought necessary as yet to proceed against persons for failing to notify, though doubtless this will be required in the near future in order to draw the attention of the public to their obligation in this respect.

At present the names and addresses of the persons who have omitted to notify births are obtained from the Registrars' returns, and a copy of the subjoined circular is sent to each of them :—

"CITY OF BIRMINGHAM.
"Health Department,
"The Council House,
.....191 .

Dear Sir,

"NOTIFICATION OF BIRTHS ACT.

"A birth at your house has been reported to me by the Registrar which apparently has not been notified in accordance with the requirements of the above Act, the operative section of which will be found on the back of this sheet.

"The Health Committee attach great importance to the prompt notification of births, and I am requested to ask you to note carefully the requirements of the Act so that there may not be a further breach.

"I am,
"Yours faithfully,
"JOHN ROBERTSON."

The attention of medical men and midwives in whose practices many failures to notify occur is drawn to the advisability of reminding parents of their duty by the following circular letter:—

"CITY OF BIRMINGHAM.
"Health Department,
"The Council House,
..... 191 .

"Dear Sir,

"NOTIFICATION OF BIRTHS ACT.

"The above Act came into operation on March 1st, 1908, and, I am glad to say, is being well carried out in Birmingham.

Notification of births (*continued*).

"A small percentage of cases, however, pass unnotified, and I find on enquiry that some of these cases have occurred amongst patients attended by you. For your information I have had printed on the back of this letter the operative sub-sections of the Act.

"The Health Committee will probably have to take some action at a later date in regard to cases not notified. They interpret the Act to mean that primarily the parent is responsible. At the same time they would feel very greatly obliged if you would remind your patients of the obligation under which the Act puts them, and particularly they would draw your attention to sub-section 3 (printed in italics). During the early part of the administration it is difficult to make everybody aware of the provisions of the Act.

"If you desire it I can supply you with forms which you could leave at the patient's house as the quickest way of giving information.

"Yours faithfully."

"JOHN ROBERTSON."

The Act has been of real value in enabling the Health Visitors to get in touch with many mothers before they decide to wean their babies, as well as enabling the ordinary advice to be given about the feeding and rearing of the infants. For a considerable number of years about 10,000 babies have been visited annually shortly after birth.

Periodically the Registrars examine the list of notified births to find any cases where the registration has been neglected.

DEATHS.

Death-rate

The total number of deaths in Birmingham during 1909 was 8,691, as compared with 8,992 in the previous year. Based on the Registrar-General's estimate of the population, the death-rate for the whole City was 15·5 per 1,000, as against 15·9 in the previous year. The death-rates recorded since 1871 are set out below :—

	Death-rate per 1,000.	
1871	24·9	
1872	23·1	
1873	24·8	Average 25·2
1874	26·8	
1875	26·3	
1876	22·4	
1877	23·9	
1878	25·2	Average 22·8
1879	21·8	
1880	20·5	
1881	19·8	
1882	20·8	
1883	21·4	Average 20·7
1884	21·6	
1885	19·8	
1886	20·5	
1887	20·4	
1888	18·6	Average 20·2
1889	19·7	
1890	22·0	

Death-rate—(*continued*).

	Death-rate per 1,000.	
1891	21·7	
1892	20·0	
1893	21·5	Average 20·3
1894	18·2	
1895	19·9	
1896	20·4	
1897	21·1	
1898	19·5	Average 20·5
1899	20·5	
1900	21·0	
1901	19·9	
1902	18·0	
1903	17·2	Average 18·1
1904	19·3	
1905	16·1	
1906	16·8	
1907	16·1	
1908	15·9	
1909	15·5	

Death-rate in England and Wales.

Comparative figures are given in the following table showing the mortality rates for certain periods in Birmingham and the corresponding figures for England and Wales :

	Birmingham.	England and Wales.
1871—1875	25·2	... 22·0
1876—1880	22·8	... 20·8
1881—1885	20·7	... 19·4
1886—1890	20·2	... 18·9
1891—1895	20·3	... 18·7
1896—1900	20·5	... 17·7
1901—1905	18·1	... 16·0
1906	16·8	... 15·4
1907	16·1	... 15·0
1908	15·9	... 14·7
1909	15·5	... 14·5

In comparing the death-rate in Birmingham during the last few years with the figures relating to an earlier period, it should be remembered that the population is at present over-estimated, and the actual death-rate is no doubt somewhat higher, as already explained, than is shown here.

Death-rates in large towns.

The mortality rates in the largest towns are shown in the next table. In each case the figures are copied from the annual summary of the Registrar-General.

DEATH-RATES IN LARGE TOWNS.

	1904.	1905.	1906.	1907.	1908.	1909.	Five years 1904-1908.
London ...	16·1	15·1	15·1	14·6	13·8	**14·0**	14·9
Liverpool ...	22·6	19·6	20·6	19·0	19·2	**19·0**	20·2
Manchester	21·3	18·0	19·2	18·1	18·2	**17·9**	18·9
Birmingham	19·9	16·2	16·8	16·2	15·9	**15·4**	17·0
Leeds ...	18·0	15·2	15·6	15·3	15·3	**14·1**	15·9
Sheffield ...	16·8	17·0	16·4	17·1	15·8	**15·1**	16·6
Bristol ...	15·6	14·6	14·5	13·2	13·6	**12·7**	14·3
West Ham	16·5	14·8	15·7	14·6	13·9	**14·0**	15·1
Bradford ...	17·6	15·2	16·1	14·8	15·5	**14·5**	15·9
Newcastle ...	19·4	16·8	17·1	15·9	16·0	**14·8**	17·0
Hull ...	18·6	16·3	16·9	16·1	16·2	**14·9**	16·8
Nottingham	17·7	16·5	16·1	17·5	15·2	**16·3**	16·6
Leicester ...	14·5	13·3	14·3	12·7	13·0	**12·9**	13·5
Salford ...	21·2	16·9	18·3	17·7	17·8	**18·0**	18·4
Portsmouth	16·9	16·6	14·9	16·0	13·8	**14·2**	15·6
Cardiff ...	14·8	13·4	14·0	15·0	13·0	**13·1**	14·0
Bolton ...	16·9	15·1	15·2	16·8	15·4	**15·1**	15·9
Croydon ...	13·8	12·5	13·4	12·4	12·8	**11·7**	13·0
Willesden ...	11·2	11·6	11·6	11·5	10·5	**10·4**	11·3
Sunderland	19·5	18·6	18·6	19·2	17·7	**16·9**	18·7

Corrected death-rates.

It is found necessary, however, to apply annually certain corrections to the figures of mortality in particular towns in order that those containing an unusually large number of females or of young adults in their population may be fairly compared with those in which these conditions do not exist. The crude and corrected death-rates for each of the towns are as follows :—

	Crude Death-rate.	Corrected Death-rate.
Willesden	10·44 ...	11·20
Croydon	11·70 ...	11·99
Bristol	12·71 ...	13·06
Leicester	12·89 ...	13·75
Cardiff	13·13 ...	14·28
Portsmouth	14·22 ...	14·60
London	14·03 ...	14·75
West Ham	14·01 ...	15·02
Hull	14·94 ...	15·31
Leeds	14·05 ...	15·33
Newcastle	14·84 ...	15·99
Bradford	14·50 ...	16·03
Sheffield	15·07 ...	16·24
Birmingham	15·42 ...	16·59
Bolton	15·12 ...	17·10
Nottingham	16·28 ...	17·15
Sunderland	16·94 ...	17·47
Salford	18·00 ...	19·88
Manchester	17·92 ...	19·98
Liverpool	19·04 ...	20·38

Corrected death-rates *(continued)*

The correction applied to Birmingham raises the death-rate by more than 1 per 1,000, which is probably due to the fact that Birmingham attracts a larger number of young adults than would be found in the average population of England and Wales.

Death-rates in wards.

As in the case of the birth-rate, so with the death-rate, there is a very great variation in the different wards. Where the better-class people and the intelligent artisans reside the death-rate is low, while in the wards where poverty exists to a greater extent the death-rate is a high one, as will be seen in the following table :—

DEATH-RATES IN WARDS.

Wards.	Death-rate per 1000. 1905.	1906.	1907.	1908.	1909.	Mean of 5 years.
Rotton Park ...	14·0	13·5	13·3	12·7	**13·3**	13·4
All Saints' ...	14·6	17·1	14·1	15·6	**14·1**	15·1
Ladywood ...	16·6	17·0	15·7	15·9	**16·9**	16·4
St. Paul's... ...	15·7	18·6	17·1	17·9	**17·9**	17·4
St. George's ...	18·8	19·8	19·3	22·1	**20·6**	20·1
St. Stephen's ...	20·0	23·4	21·2	23·1	**23·2**	22·2
St. Mary's ...	20·9	22·8	21·4	25·9	**25·2**	23·2
St. Bartholomew's	23·1	23·1	23·6	23·8	**23·3**	23·4
Market Hall ...	17·0	16·1	17·1	16·0	**14·6**	16·2
St. Thomas' ...	17·0	20·8	18·3	17·8	**18·7**	18·5
St. Martin's ...	16·0	17·6	16·4	16·0	**16·8**	16·6
Edgbas. & Harborne	11·1	11·7	11·9	11·0	**10·9**	11·3
Deritend	20·6	22·6	21·3	20·8	**20·3**	21·1
Bordesley ...	13·4	13·4	12·9	12·5	**11·9**	12·8
Duddeston ...	20·1	18·7	20·7	20·8	**20·3**	20·1
Nechells	17·9	19·9	20·5	20·6	**19·2**	19·6
Balsall Heath ...	12·8	12·3	13·6	13·7	**14·0**	13·3
Saltley	13·5	13·4	13·0	13·6	**12·3**	13·2
Whole City ...	16·1	16·8	16·1	15·9	**15·5**	16·1

The highest death-rate was recorded in St. Mary's Ward, viz., 25·2 per 1,000, while in certain of the large artisan wards, such as Bordesley and Saltley, as well as in Edgbaston and Harborne, the death-rate was below 13 per 1,000.

Anyone who is familiar with the local populations in the various wards will recognise at once how close an association there is between high mortality and high incidence of disease on the one hand and conditions of ignorance and poverty on the other.

Death-rates in city and suburbs.

The estimated population, the number of deaths, and the death-rate in each of the various districts immediately surrounding Birmingham are given in the following table :

DEATH-RATE IN BIRMINGHAM AND DISTRICT.

	1909. Population.	1909. Deaths.	Death-rate.
Birmingham ...	563,629	8,667	15·4
*King's Norton ...	81,632	795	9·8
†Yardley	60,500	626	10·3
†Castle Bromwich	3,050	29	9·5
†Erdington ...	29,720	312	10·5
*Aston Manor ...	85,257	1,106	13·0
*Handsworth ...	70,186	688	9·8
*Smethwick ...	70,377	898	12·8
*Oldbury	27,495	473	17·2
Total—Birmingham and District	991,846	13,594	13·7

*Registrar-General. † Annual Report of Medical Officer of Health.

It will be seen that the mean death-rate for this great centre of population during last year was 13·7 per 1,000, as compared with 14·1 per 1,000 in 1908.

Death rates at various ages.

The death-rates at various ages are set out below :—

Age Groups.	Death-rate per 1000. 1906.	1907.	1908.	1909.
Under 5 years ...	59·4	52·6	51·2	49·8
5 and under 10 years ...	3·9	3·8	3·5	4·0
10 ,, 15 ,, ...	1·9	1·8	1·8	1·7
15 ,, 20 ,, ...	2·2	2·4	2·4	2·2
20 ,, 25 ,, ...	2·9	2·8	2·2	2·3
25 ,, 35 ,, ...	4·8	4·9	5·4	4·6
35 ,, 45 ,, ...	10·2	10·4	10·4	9·7
45 ,, 55 ,, ...	16·6	17·9	18·1	16·8
55 ,, 65 ,, ...	33·6	34·4	35·5	31·9
Over 65 years ...	94·6	93·9	98·1	97·8

It will be noted from the above that there has been a distinct decline in the death-rate of children under five years of age during the past few years, with a considerable increase in the death-rates at ages over 65. This table indicates how important a factor the age-distribution of a population must be in determining a high or low mortality, and, as already pointed out, this is one of the reasons why the Registrar-General finds it necessary to apply a factor for correction, so that in comparing the mortality of one town with another any discrepancy due to a larger number of young persons in the one as compared with the other shall not invalidate the comparison.

INFANT MORTALITY.

Infant mortality.

The number of infants who died before they reached the age of one year was 2,030, as against 2,339 in 1908, 2,300 in 1907, 2,686 in 1906, and 2,451 in 1905.

The infant mortality-rate in Birmingham and in England and Wales for certain comparable periods are set out in the table below :—

	Birmingham.		England and Wales.	
1871 ...	190		158	
1872 ...	166		150	
1873 ...	181	Average 182	149	Average 153
1874 ...	178		151	
1875 ...	196		158	
1876 ...	160		146	
1877 ...	164		136	
1878 ...	170	„ 164	152	„ 145
1879 ...	150		135	
1880 ...	178		153	
1881 ...	150		130	
1882 ...	165		141	
1883 ...	159	„ 161	137	„ 139
1884 ...	174		147	
1885 ...	157		138	
1886 ...	176		149	
1887 ...	178		145	
1888 ...	154	„ 173	136	„ 145
1889 ...	171		144	
1890 ...	184		151	
1891 ...	171		149	
1892 ...	166		148	
1893 ...	198	„ 176	159	„ 151
1894 ...	164		137	
1895 ...	182		161	
1896 ...	197		148	
1897 ...	214		156	
1898 ...	190	„ 199	160	„ 156
1899 ...	193		163	
1900 ...	199		154	
1901 ...	188		151	
1902 ...	157		133	
1903 ...	158	„ 171	132	„ 138
1904 ...	195		145	
1905 ...	155		128	
1906 ...	168		132	
1907 ...	147		118	
1908 ...	145		120	
1909 ...	135		109	

It will be noted that both in Birmingham and in England and Wales the rate for 1909 is the lowest yet recorded. The previous best in Birmingham was in 1908, when it was 145 per 1,000 births.

Infant mortality in each quarter.

Infant mortality is frequently seasonal, and its seasonal character will be seen from the following table, in which the rate for the whole year and for each quarter of the year are recorded, together with the mean temperature of the soil during the third quarter, and also the rainfall.

Infant mortality in each quarter *(continued).*

YEAR.	INFANT MORTALITY RATE.					Meteorological Observations (3rd Quarter)	
	Whole Year.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Mean Temperature of soil (4ft. deep).	Total Rainfall
1899 ...	193	144	130	337	163	55·9	4·98
1900 ...	199	177	164	267	190	54·4	5·43
1901 ...	188	156	139	268	191	54·8	5·91
1902 ...	157	161	146	143	178	52·8	7·51
1903 ...	158	143	129	171	184	52·0	9·85
1904 ...	195	172	152	274	185	54·1	5·75
1905 ...	155	136	136	200	149	54·1	7·33
1906 ...	168	141	139	259	145	54·0	2·97
1907 ...	147	157	126	124	184	52·2	6·08
1908 ...	145	134	118	184	145	52·9	6·94
Average of ten years	170	152	138	223	171	53·7	6·27
1909 ...	135	154	104	145	138	52·3	7·64
Percentage Increase or Decrease in 1909	– 20 6	+ 1·3	– 24·6	– 35·0	– 19·3		

As will be seen from the above table the infant mortality-rate during the first quarter in 1909 was 1·3 per cent. above the average for the first quarter in the preceding ten years. In the second quarter it was 24·6 per cent. below the average, in the third quarter it was 35·0 per cent. below, and in the fourth quarter 19·3 per cent. below, that is to say, the largest reduction occurred in the third quarter, and was doubtless due to the fact that this quarter was relatively cool and wet.

Chief causes of infant deaths

Further explanation of the reduction in the infant mortality is given in the next table, in which the deaths from various causes during 1909 may be compared with those in previous years. It will be noted that the number of deaths from summer diarrhœa was small, and also that the number of deaths attributed to debility and marasmus has declined considerably.

Causes of Death.	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
Measles	35	62	37	50	47	40	46	81	13	108
Whooping Cough ...	129	81	122	37	210	72	105	63	121	54
Diarrhœa	475	634	327	462	764	364	667	188	364	183
Enteritis	331	154	78	84	92	126	151	116	128	99
Tuberculous Diseases	114	129	98	111	93	75	54	70	58	40
Premature Birth ...	353	348	361	365	377	304	321	318	338	318
Debility & Marasmus	670	648	562	531	569	536	453	458	457	391
Convulsions ...	178	167	172	119	144	128	98	120	104	79
Bronchitis, Pneumonia, and Pleurisy ...	500	399	409	413	505	380	356	441	335	314
Suffocation... ...	92	92	70	95	96	75	85	78	87	61
All other Causes ...	489	436	445	401	405	351	350	367	334	383
Total ...	3366	3150	2681	2668	3302	2451	2686	2300	2339	2030

The details of infant mortality during 1909 are given in the following table, which shows not only the cause of death, but the number of deaths occurring during each month of age.

INFANTILE MORTALITY DURING THE YEAR 1909.

DEATHS FROM STATED CAUSES IN WEEKS AND MONTHS UNDER ONE YEAR OF AGE.

CAUSE OF DEATH.	WEEKS.				Total under 1 Month.	MONTHS.											Total Deaths under One Year.
	0	1	2	3		1	2	3	4	5	6	7	8	9	10	11	
Small-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chicken-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Measles	..	..	..	..	..	..	..	1	2	3	8	13	19	15	25	22	108
Scarlet Fever	..	..	..	..	..	..	1	..	..	..	..	1	1	..	..	1	4
Diphtheria: Croup	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	2	4
Whooping Cough	..	..	2	..	2	2	9	2	2	3	6	7	10	5	3	3	54
Diarrhœa, all forms	2	1	4	3	10	20	22	15	31	21	16	16	6	12	9	5	183
Enteritis (*not Tuberculous*)	1	2	1	2	6	13	17	16	9	14	4	6	3	7	3	1	99
Gastritis	..	..	..	..	..	7	10	8	5	3	4	3	..	1	..	..	41
Premature Birth	231	27	34	7	299	13	2	1	1	..	1	..	..	..	1	..	318
Congenital Debility and Defects	120	45	34	25	224	34	14	5	1	..	4	..	3	1	..	..	286
Injury at Birth	10	1	..	..	11	..	..	..	..	..	..	..	..	..	..	..	11
Want of Breast-milk	..	1	3	1	5	2	3	3	2	1	2	1	..	..	..	..	19
Atrophy, Debility, Marasmus	..	..	..	..	..	46	39	42	21	11	14	14	8	8	7	3	213
Tuberculous Meningitis	..	..	..	..	..	1	1	1	3	2	1	1	1	1	1	1	14
Tuberculous Peritonitis Tabes Mesenterica	..	..	..	..	..	2	..	4	2	3	..	1	..	1	..	..	13
Other Tuberculous Diseases	..	..	..	..	..	1	1	1	2	1	1	2	..	3	1	..	13
Erysipelas	..	..	..	..	..	3	1	1	..	1	..	..	..	..	..	..	6
Syphilis	1	3	..	2	6	10	4	1	..	1	..	..	1	..	2	..	25
Rickets	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	1	4
Meningitis (*not Tuberculous*)	..	1	..	..	1	4	2	6	3	7	2	6	4	2	5	6	48
Convulsions	13	4	5	2	24	13	6	9	5	3	4	4	3	2	5	1	79
Bronchitis	..	3	5	10	18	22	24	16	8	9	10	12	8	9	11	10	157
Laryngitis	..	..	1	..	1	..	..	..	..	..	.	..	..	1	..	..	2
Pneumonia	2	1	1	2	6	8	11	12	14	18	17	17	17	13	10	14	157
Suffocation, overlaying	5	3	3	5	16	13	7	9	6	3	..	..	..	..	..	2	56
Other Causes	13	2	13	5	33	10	3	7	7	6	16	9	5	10	5	5	116
	398	94	106	64	662	224	177	160	124	111	110	114	89	92	90	77	2030

Births in the year—legitimate 14,610, illegitimate 375; Deaths from all causes at all ages—8,691.

Infant mortality in wards.

The infant mortality in the different wards has varied very much. It will be seen from the following table that the highest mortality rates occurred in St. Stephen's and St. Mary's Wards, while low rates were recorded in certain of the populous wards occupied mainly by the intelligent artisan classes :—

INFANT MORTALITY IN WARDS.

WARDS.	Infantile Mortality Rate per 1,000 Births.						Percentage Increase or Decrease in 1909, compared with the 5 years 1904-1908.
	1904.	1905.	1906.	1907.	1908.	1909.	
Rotton Park	178	134	136	135	117	116	– 17
All Saints'	173	126	166	129	135	111	– 24
Ladywood	192	160	157	133	118	128	– 16
St. Paul's	225	138	185	158	201	182	+ 1
St. George's	213	151	161	150	169	166	– 2
St. Stephen's	232	177	222	199	214	211	+ 1
St. Mary's	331	201	207	200	208	208	– 9
St. Bartholomew's	263	207	268	198	201	155	– 32
Market Hall	187	186	195	199	208	139	– 29
St. Thomas'	196	164	199	135	153	157	– 7
St. Martin's	185	179	185	160	137	146	– 14
Edgb'n and Harb'e	133	131	117	100	93	99	– 14
Deritend	208	205	201	179	159	141	– 26
Bordesley	146	131	132	119	107	94	– 26
Duddeston	217	171	158	171	174	167	– 6
Nechells	219	161	192	166	171	158	– 13
Balsall Heath	150	113	117	98	104	109	– 6
Saltley	178	140	130	125	105	107	– 21
City	195	155	168	147	145	135	– 17

Infant mortality in large towns.

The following figures, except those for Yardley, Erdington, and Oldbury, are copied from the Registrar-General's Annual Summary, and show in a comparative table the mortality rate for each of the large towns in England, together with seven districts round Birmingham. The table also gives the percentage increase or decrease in the figures for 1909 as compared with the average of the preceding five years :—

INFANTILE MORTALITY

IN 20 LARGEST TOWNS AND IN 7 LARGE DISTRICTS NEAREST TO BIRMINGHAM.

	1909.	Average, 1904-1908.	Percentage above or below Average
London	108	127	- 15
Liverpool	144	161	- 11
Manchester	134	162	- 17
Birmingham	**134**	**162**	**- 17**
Leeds	122	149	- 18
Sheffield	118	154	- 23
Bristol	100	122	- 18
West Ham	124	145	- 14
Bradford	116	146	- 21
Newcastle	119	140	- 15
Hull	114	152	- 25
Nottingham	150	162	- 7
Leicester	127	149	- 15
Salford...	141	158	- 11
Portsmouth	96	125	- 23
Cardiff	103	132	- 22
Bolton	128	154	- 17
Croydon	80	109	- 27
Willesden	97	111	- 13
Sunderland	135	144	- 6
King's Norton	72	96	- 25
Yardley	89	117	- 24
Erdington	95	122	- 22
Aston Manor	124	148	- 16
Handsworth	85	104	- 18
Smethwick	113	133	- 15
Oldbury	135	167	- 19

Infant mortality in St. George's and St. Stephen's Wards.

The subject of infant mortality has been dealt with at considerable length in previous years, and a great many of the measures which are specially directed to the prevention of infant mortality have been fully described, so that it is unnecessary here to call attention to the general procedure. There are, however, a few special features which require to be mentioned. The work done during 1908 by Dr. Jessie Duncan and the two Health Visitors who assist her in St. Stephen's and St. George's Wards was made the subject of a special report, a copy of which is bound up with this report.

In order that a record of Dr. Duncan's second year's work may be available, the following short account is reprinted here :— Infant mortality in St. George's and St. Stephen's Wards— (*continued*).

"The Council House,
"Birmingham,
"January, 1910.

"Dear Sir,

"*St. George's and St. Stephen's Wards.*

"By means of the 'Notification of Births Act,' the names of children born in these two wards during 1909 have been obtained, and the first visit to each of them has been paid by me at the end of the first week after birth. At this first visit information is obtained regarding the woman's previous confinements, industrial work, etc., and advice is given as to the care and feeding of the child. If artificial food is already being used, definite instructions are given about the preparation and administration of the food. In any case, the mother is invited to bring her baby to the 'Infant Consultation' for inspection and weighing.

"The names are then handed to one of the Health Visitors (two of whom are associated with me in the work), and the child is visited by her once a week till it is five weeks old, and then once a month till 12 months old. In the course of these visits, if it is found by the Health Visitor that the child is not thriving, or that artificial food is being given in addition to or instead of natural feeding, I pay a second visit.

"If the child is found to be unsatisfactory in any way, I take over the case entirely, and visit at frequent intervals, so that the Health Visitors visit only healthy children, and I take charge of the ailing and sickly ones.

"'Infant Consultations' are held twice a week in a room in the district rented for the purpose. The results in this direction have been most gratifying. From my experience with this class of people, I am of the opinion that much more good can be done by combining regular home visiting with consultation work than can be done otherwise. The women are urged and encouraged to bring their children regularly to the consultation. Each is provided with a weight chart, a duplicate of which is kept for reference. This chart has the normal weight curve in red, so that it is easy for the mother to see at a glance if her child is progressing satisfactorily.

"One very encouraging fact is that many drunken women and the mothers of illegitimate children have been persuaded to come regularly. This is all the more gratifying when it is remembered that these women come simply for the sake of the child and for the advice given. They are not bribed in any way, not even with the customary cup of tea.

Infant mortality in St. George's and St. Stephen's Wards—(*continued*).

"Of course, as can be readily understood, there are a certain number who are very difficult to deal with, and who have to be visited many times and urged to come. Education in this matter is, however, doing much for such women. Those who have had their second child since this work was started are profiting now, if they did not do so before, by the advice given, and are found to be more amenable.

"These 'consultations,' which were started in January, 1909, are still developing, and the attendances for the year have been most satisfactory. During the year there were 2,600 attendants, being an average of 52 per week. Six hundred and five mothers have brought their children regularly to be weighed. At the end of the year 182 weight charts were completed.

"The women take an increasing interest in the weighing of their babies, and some of them are now bringing their second child.

"One woman who had never been able to nurse any of her children, and had lost seven under one year of age from diarrhœa and enteritis, brought her baby regularly for advice. The child at 12 months was strong and healthy, and weighed 22 lbs. She is now bringing a second one, who promises to be as fine a child as the other.

"Many who are at work have their children sent up regularly for inspection and weighing, and some take an afternoon off their work so that they may know how the child is progressing.

"The use of the weighing machine is the best means of convincing a woman that her breast milk is sufficient for the needs of her child, and that no additional food is necessary.

"In one case the woman (8 para) who had never nursed any of her children wished to supplement breast-feeding when the child was four weeks old. She was persuaded to continue breast-feeding alone, and at 12 months the baby weighed 18 lbs. Numerous examples of the same kind could be shown.

"Alcoholism in the mother has a marked effect on the weight of the child. The children of such women are in all cases puny and weak, and much below average weight.

"Poverty has, perhaps, the greatest effect of all on the progress of the child. Many children of such parents who have been of average weight at birth have begun to go back after the first month or two, and at 12 months have been several pounds below weight.

"I am now beginning a class for expectant mothers, and I am hopeful that much good will be done by advising the mother about her own health and habits during pregnancy, and also the care of the child after birth. Many serious mistakes, especially in the case of primiparæ, will in this way be avoided.

Infant mortality in St. George's and St. Stephen's Wards—(*continued*)

"The following figures afford a comparison of the work done in 1909 and that of 1908 :—

	1909.	1908
Total number of children born	1500	1538
Number notified under Notification of Births Act ...	1398*	1342
Legitimate births	1373	1317
Illegitimate births	25	25
Number of confinements attended by a doctor only	288	288
Number of confinements attended by a doctor and a midwife	37	20
Number of confinements attended by a midwife only	992	994
Number of confinements in institutions	66	40

* Including 15 in which the address was wrong.

Cases excluded from subsequent visiting :—

Stillbirths	44	39
Dead at first visit	45	53
Died during first month	8	10
Better class houses	37	36

Deaths of children who were born and died during the year :—

Number of these deaths under 1 week	44	35
,, ,, between 1 and 4 weeks	36	21
,, ,, ,, 1 ,, 2 months	21	30
,, ,, ,, 2 ,, 3 ,,	24	26
,, ,, ,, 3 ,, 6 ,,	37	36
,, ,, ,, 6 ,, 9 ,,	10	22
,, ,, ,, 9 ,, 12 ,,	—	3
Total	172	173

Number of the above deaths from the following causes :—

Prematurity and congenital defects	78	51
Epidemic enteritis	24	49
Marasmus	35	24
Bronchitis and broncho-pneumonia	16	12
Overlaying	7	11
Convulsions	6	10
Whooping cough	4	4
Meningitis	1	4
Other causes	1	8
Number of deaths which occurred before first visit ...	53	49
Number of these in which the baby was the first child	11	35

Industrial employment of the mothers whose children were born and died during the year :—

At work before confinement	95	88
Not at work	77	78
At work after confinement	31	32
Not at work	141	134

Employment of all mothers :—

At work before confinement	729	735
Not at work	771	803
Number of premature births	80	65
Number in which mother was employed before confinement	48	33
Number in which mother was not employed	32	32

"I am,

"Yours faithfully,

"JESSIE G. DUNCAN, M.B."

Infants' Health Society

In addition to the work of Dr. Duncan and the official Health Visitors, two voluntary organisations definitely dealing with the prevention of infant mortality have been started in the City. One of these, "The Birmingham Infants' Health Society," has achieved very fine results in St. Bartholomew's Ward. Here a qualified lady visitor is employed both to pay visits herself and to instruct voluntary workers. There is also a weekly "Infant Consultation," and certain other organisations, all having for their object the instruction of mothers in the methods of feeding and rearing their children, and the subsequent keeping in touch with these mothers.

Another organisation on similar and most excellent lines has been started to deal with these questions in the municipal Ward of St. Mary. It is to be hoped that similar organisations will be started in other parts of the City. One of the advantages of taking the municipal ward as the area for such work is that figures exist as to the rate of mortality in them in previous years, and, therefore, the effect of such work may be measured.

Measures for reducing infant mortality.

Birmingham has been spending a large amount of money and putting forward considerable effort, more particularly during the past 10 years, to prevent the enormous waste of infant life which takes place through the ignorance, carelessness, and poverty of certain classes of the population, and as the result of the experience gained it may be said that the system of home-visiting, together with the additional assistance of skilled advice given at consultations has proved of greater use than any other plan. Apparently it is the method which appeals to the working class mothers in a way that does not obtain with many other methods. Such a simple incident as the systematic and regular weighing of the child gives the mother great interest in its welfare, and enables her to know at once whether the child is making progress or not. While the assembling of young infants at these consultations is theoretically open to the objection that infection might be spread, it is found that such cases do not appear to occur. On the other hand, the meeting together of the mothers is a stimulus to the poorest among them to keep up a higher standard of cleanliness and carefulness.

INFECTIOUS DISEASES.

Zymotic mortality

One thousand one hundred and forty deaths were recorded as due to one or other of the seven principal zymotic diseases. In 1908 the number was 1,077; in 1907, 992; and in 1906, 1,521.

The rate of mortality from this group of diseases was, therefore, 2·03 as compared with 1·90, 1·80, 2·78, and 1·94 in the four preceding years.

The following is a comparative statement of the deaths from the individual diseases in 1909, and in the ten preceding years :— Zymotic mortality—(*continued*).

Disease.	1909.	Average, 1899 to 1908.	Above or below Average.
Smallpox	0	2	- 2
Measles	527	207	+ 320
Scarlet Fever	106	106	—
Diphtheria	89	108	- 19
Whooping Cough	152	243	- 91
Typhoid Fever	22	79	- 57
Diarrhœa	244	622	- 378

Of the 76 great towns, 11 had higher rates than Birmingham, the highest being 2·60 in Wigan, 3·02 in Warrington, and 3·66 in St. Helens, while the lowest zymotic rates recorded were 0·29 in Hastings, 0·46 in Hornsey, and 0·47 in Burton. Zymotic death-rates in large towns.

SMALLPOX.

No case of this disease occurred in 1909, and in only two instances were doubtful cases reported to the Health Department for examination. Smallpox.

VACCINATION.

The Vaccination Officers have supplied the Department with the following return for the year 1909 :— Vaccination

Births returned	15,401		
Conscientious objections	454	or 2·9%	of total.
Died unvaccinated	1,519		
Successfully vaccinated	11,266	or 81·2%	of survivors.
Postponed by medical advice ...	99	or 0·7%	,,
Removed to other districts ...	202	or 1·5%	,,
Lost sight of	1,480	or 10·7%	,,
Still under notice	231	or 1·7%	,,

During the year under review many instances of worthless vaccination by medical men have been seen—cases in which vesiculation is little larger than a pin head in one or two places. If, as alleged, such vaccination is worthless as a protection against smallpox, it is desirable that the true state of vaccination at the present time should be known, and measures taken to amend the present very unsatisfactory condition of affairs.

The fault lies largely with the general public, who crowd to the doctor who will stoop to do what is obviously a fraud on the public at large—inefficient vaccination.

MEASLES.

Measles.

During 1909, 527 deaths from this disease were registered. As will be seen from the table appended this represents the largest mortality yet recorded except that of 1871.

DEATH-RATE FROM MEASLES.

Year.	England and Wales.		Birmingham.	
	Annual.	Quinquennial.	Annual.	Quinquennial.
1871	·41		1·16	
1872	·37		·13	
1873	·32	·37	·35	·48
1874	·52		·38	
1875	·26		·38	
1876	·41		·23	
1877	·37		·82	
1878	·31	·38	·14	·36
1879	·36		·43	
1880	·48		·16	
1881	·28		·33	
1882	·48		·37	
1883	·35	·41	·38	·43
1884	·42		·80	
1885	·53		·29	
1886	·44		·92	
1887	·60		·56	
1888	·35	·47	·45	·63
1889	·52		·46	
1890	·44		·76	
1891	·44		·24	
1892	·46		·70	
1893	·37	·41	·10	·39
1894	·39		·64	
1895	·38		·27	
1896	·57		·61	
1897	·41		·82	
1898	·42	·42	·36	·48
1899	·31		·38	
1900	·39		·25	
1901	·28		·57	
1902	·39		·35	
1903	·27	·33	·37	·42
1904	·36		·39	
1905	·32		·44	
1906	·27		·42	
1907	·36		·59	
1908	·22		·11	
1909	·35		·94	

Measles epidemic

On March 1st, 1909, a special report was issued on the epidemic. This was bound as an appendix to the annual report of the Medical Officer of Health for 1908. The whole epidemic may now be represented in the following four-weekly periods :—

Four weeks ending.		Total Deaths from Measles.	
August 29th,	1908	0	Measles epidemic—(*continued*).
Sept. 26th	,,	2	Before the epidemic :—
Oct. 24th	,,	1	31 deaths in 20 weeks.
Nov. 21st	,,	10	
Dec. 19th,	,,	18	
Jan. 16th	1909	41	
Feb. 13th	,,	76	Epidemic period :—
March 13th	,,	161	476 deaths in 20 weeks.
April 10th	,,	136	
May 8th	,,	62	
June 5th	,,	21	
July 3rd	,,	24	After the epidemic :—
July 31st	,,	14	67 deaths in 20 weeks.
August 28th	,,	6	
Sept. 25th	,,	2	

The above figures show clearly the extraordinary rapidity with which a measles epidemic will develop and afterwards subside ; a fact which makes the disease very difficult to control.

Measles and school attendance.

All the houses in which measles is known to exist are visited by the Health Visitors, who leave printed leaflets regarding the precautions necessary to prevent the spread of the disease and ascertain which of the children in the house should be kept away from school. During the epidemic period last year they visited no less than 6,000 houses for this purpose, practically all of which had been reported by the Head Teachers of the elementary schools. This means that for several months considerably over 300 houses per week were visited in connection with the measles epidemic alone. Prior to 1909 it was the custom in Birmingham, when a case of measles occurred in a house, to keep all the other children as well as the patient away from school. This practice led to an unnecessarily large loss of attendance without any commensurate advantage in stopping the spread of the disease. Accordingly it was decided in the early part of last year to exclude from school attendance only those contacts who had not previously had an attack of measles, while those who had already suffered from the disease were allowed to continue to attend school. At the same time it was decided to attempt to limit the spread of measles in the Infants' Departments, in which the vast majority of the patients are to be found, by issuing a warning circular to parents whenever an outbreak of measles occurs.

After conference between the Education Department and the Health Department, the following circular was issued to the Head Teachers of the elementary schools :—

Measles and school attendance—(*continued*).

"Education Department,
"Edmund Street,
"11th March, 1909.

"Dear Sir, or Madam,

MEASLES AND SCHOOL ATTENDANCE.

"The Health Committee of the City Council have suggested, on the recommendation of the Medical Officer of Health, that in cases of measles only those children who have not already had the disease should be kept away from school, and, in accordance with this suggestion, the Education Committee have decided to amend their regulations. Please, therefore, note that in future it will not be deemed a reasonable excuse for a child who has had measles to be kept from school when other children in the same family are suffering from that disease. Children who have had measles are now required to attend school, and those who have not had measles are to be kept away from school if a case of the disease exists in the family or in the house in which they are living.

"The Education Committee have also decided to attempt to prevent the spread of measles in the Infants' Departments by a method of warning parents, so that the parents warned may be on the outlook for the earliest symptoms of the disease.

"In carrying out the scheme, the Medical Officer of Health has undertaken to co-operate with the Head Teacher in every way possible.

"One of the most infectious periods in measles is that immediately preceding the appearance of the rash, at a time when there are often very few symptoms which the teacher notices. From the commencement of the incubation period until the appearance of the eruption, fourteen days usually elapse, but the time may vary from nine to sixteen days. There is generally a period of two or three days before the appearance of the eruption during which the disease is highly infectious, and if parents can be induced to keep their children at home during these three days it is hoped that the infection may not spread in the school.

Measles in infants' schools.

"The following instructions are issued to *Teachers of Infants' Departments*, for their guidance in this attempt to prevent the spread of measles :—

"1. Whenever measles is said to be the cause of absence of a pupil in your Department, please notify at once to the Medical Officer of Health, who will have enquiries made and report to you the date on which the rash commenced.

"2. Having thus obtained verification, please distribute the circulars (forwarded herewith) to each scholar

Measles in infants' schools (*continued*).

who has not already suffered from measles *in the class* attended by the affected child. Such circulars will be useless if distributed after *twelve days* from the appearance of the rash in the first case affected. The best time to distribute them will probably be from the fifth to the tenth day after the commencement of the rash in the first case.

"3. It is probable that secondary cases may occur in from *nine to sixteen days* after the first one. Should such occur, it will not be necessary to re-issue the warning to parents after such secondary cases. When, however, a new infection takes place unconnected with the first, the warning notices should be again issued.

"4. Please send names and addresses to the Medical Officer of Health of any children kept away from school as a result of issuing the warning notices, and he will have each case investigated and report the result to you.

"Yours faithfully,

"JNO. ARTHUR PALMER,

"*Secretary.*"

The following is a copy of the warning circular referred to :—

"City of Birmingham."

"*Education Committee.*

.....School.

..... 191 .

"Sir, or Madam,

"A case of measles has occurred in the class at the above school in which your child is a scholar. I am desired, on the suggestion of the Medical Officer of Health, to ask you to *continue to send your child to school* unless any of the early signs of measles are noticed, such as sneezing, running at the eyes and nose, a general appearance of having caught a cold, and probably a feeling of being out of sorts.

"If you notice any of these signs within the next ten days it will be well to keep your child away from school and *in a warm room (preferably in bed) for three days*, by which time you will be able to decide whether measles is going to develop or not.

"It is most important in preventing the spread of measles that the first signs of the disease should be noted, and the child kept at home.

"The receipt of this notification will not entitle a parent to keep his child away from school without definite reason.

"Yours faithfully,

.....

"*Head Teacher.*"

SCARLET FEVER.

Scarlet fever

There were 2,871 new cases of scarlet fever notified during 1909, as compared with 2,275 in 1908. The total notifications of scarlet fever received numbered 2,941, the difference being due to errors of diagnosis and the notification of some cases which were not Birmingham cases.

The sickness rate for scarlet fever per 1,000 of the population was 5·11 for the year.

The number of deaths was 106, making a fatality rate of 3·7 per cent., as compared with 3·4 per cent. in 1908.

This is equal to a death rate from scarlet fever per 1,000 of the population of 0·19.

Scarlet fever "waves."

The sickness rate and fatality rate of scarlet fever for each year since 1890 are shown in chart No. 1, expressed as sickness rate per 1,000 of the population and fatality rate per cent. of cases. In chart No. 2 the distribution of the cases throughout the year is shown for the past 12 years.

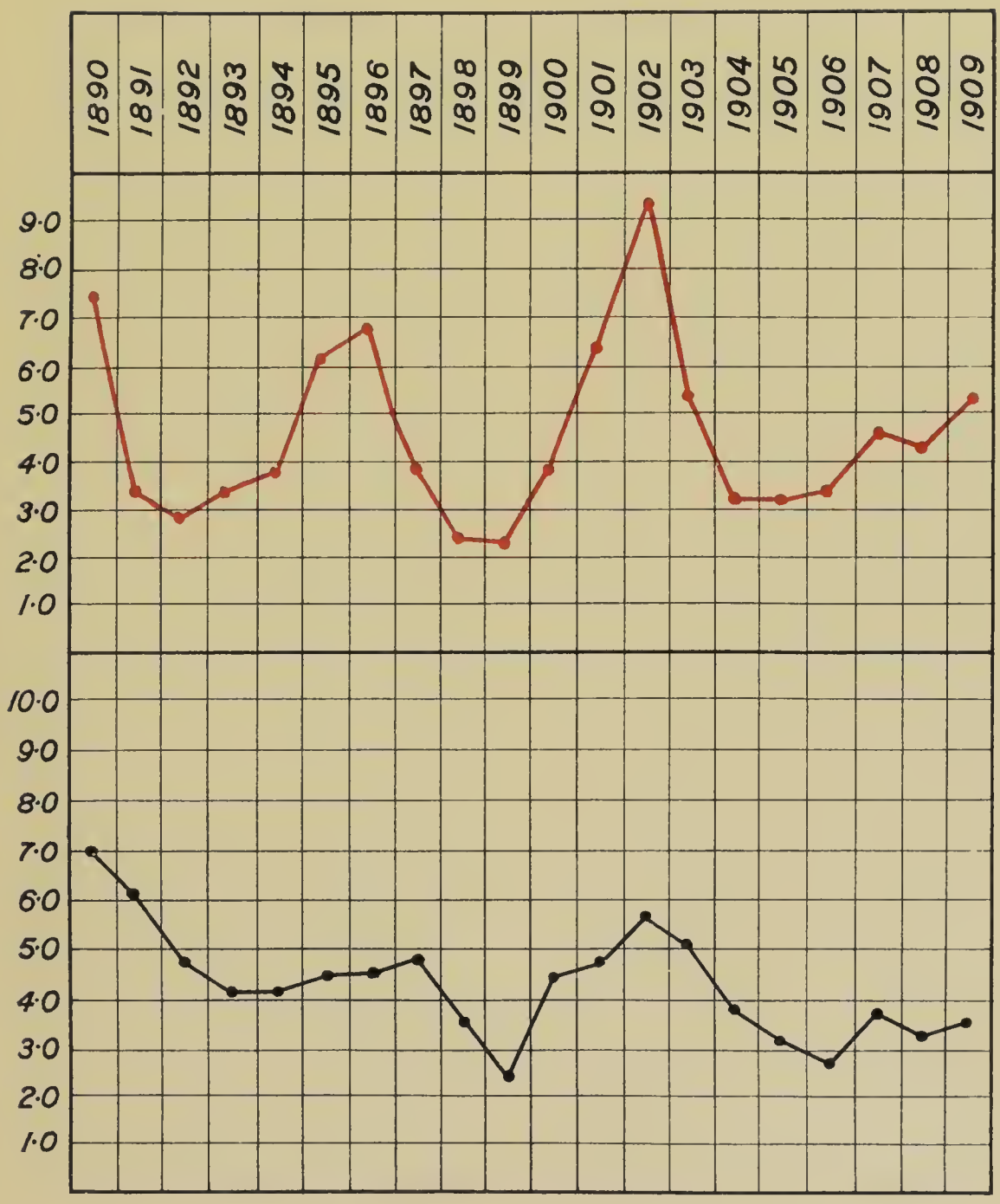
It will be seen from the chart that the year in question has produced a somewhat high sickness rate for scarlet fever, compared with that of the preceding year. The striking regularity from year to year in the rise and fall of the sickness rate since 1890 has not been exactly continued. Since that date this rate for the disease has varied in cycles of six years; it being at its maximum every sixth year, viz., in 1890, 1896, and 1902 (see chart). The rhythmical sequence has, however, been interrupted during the last three years. During the present cycle, the rate for the sixth year (1908) was comparatively low, that of the previous year having been higher owing to an autumn "outbreak," and the cyclical elevation of the rate has fallen upon 1909. While this is so, the rate for 1909 is lower than the high rates of 1890, 1896, and 1902.

The increased number of cases took the form of a rise during the summer and autumn, beginning in June and reaching its highest in the latter half of September, and the month of October, and falling then considerably to the end of the year.

Scarlet fever in wards.

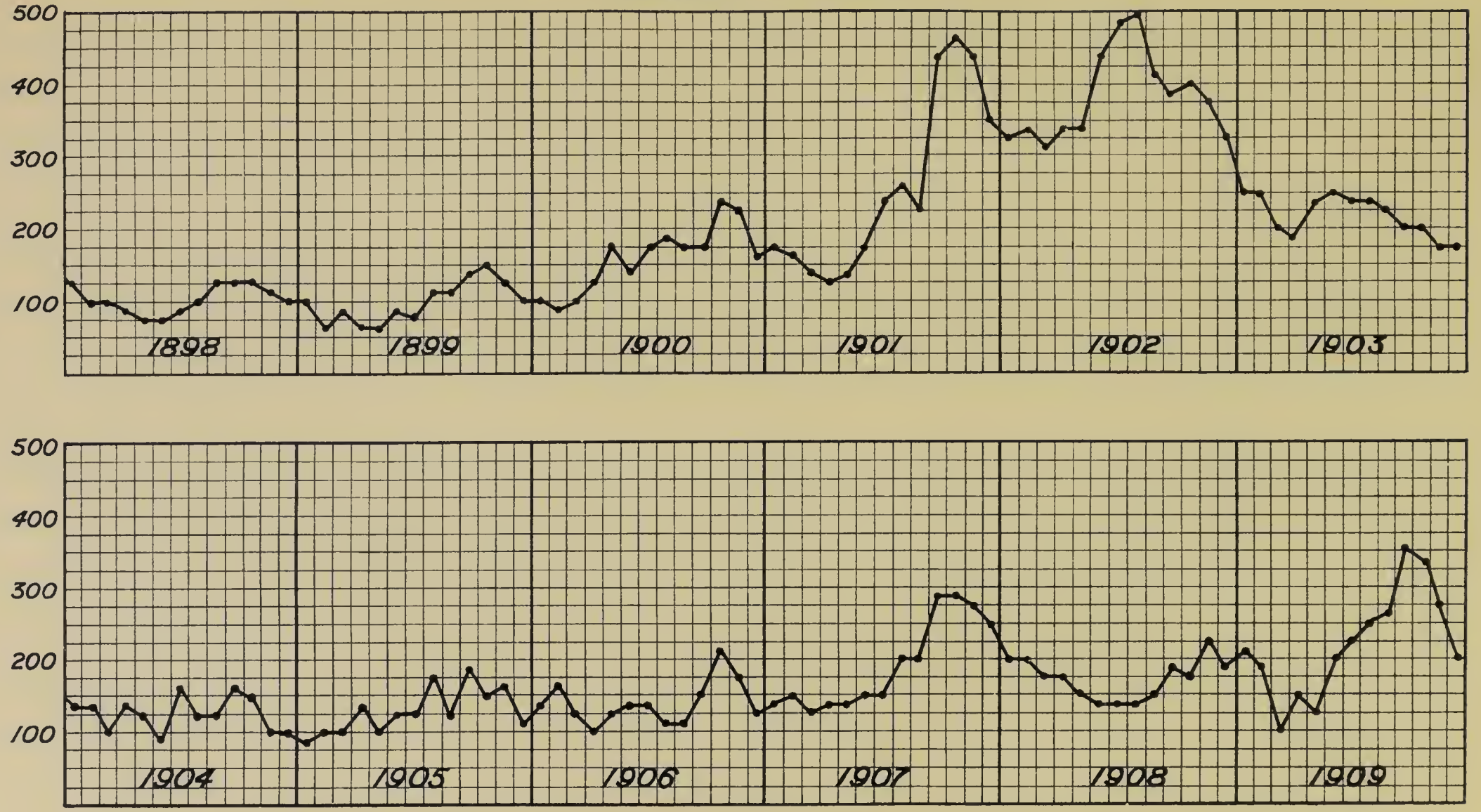
The incidence rate per 1,000 for the City and for each of the wards for the five years 1905-1909 inclusive (together with the mean) is shown in the following table:—

CHART Nº I.
SCARLET FEVER.



SICKNESS-RATE PER 1,000. ——
FATALITY-RATE PER CENT. ——

CHART Nº 2.



Cases of Scarlet Fever in four week Periods

SCARLET FEVER SICKNESS RATES.

Scarlet fever in wards—(*continued*).

Ward.	1905.	1906.	1907.	1908.	1909.	Mean of five years.
Rotton Park	3·38	3·22	3·96	5·14	4.17	3·97
All Saints'	3·84	3·41	3·69	4·67	7·51	4·62
Ladywood	2·98	2·75	2·82	2·38	1·90	2·57
St. Paul's	2·00	1·72	3·73	3·61	4·98	3·21
St. George's	4·57	5·04	4·48	5·86	7·90	5·57
St. Stephen's	4·00	5·20	6·06	4·77	7·68	5·54
St. Mary's	3·28	2·59	4·33	1·85	5·02	3·41
St. Bartholomew's ...	3·07	2·19	5·34	2·46	5·12	3·64
Market Hall	1·88	2·12	4·59	1·82	1·94	2·47
St. Thomas'	2·15	1·33	4·38	2·64	2·32	2·56
St. Martin's	1·78	2·09	6·72	3·20	3·48	3·45
Edgbaston and Harborne	2·26	2·23	4·88	2·28	4·89	3·31
Deritend	2·07	1·72	3·41	3·96	5·12	3·26
Bordesley	3·03	3·27	4·06	4·18	5·82	4·07
Duddeston	4·19	3·75	6·08	3·79	4·19	4·40
Nechells	3·35	4·21	6·13	4·86	6·62	5·03
Balsall Heath	2·35	3·56	4·25	7·63	4·08	4·37
Saltley	4·04	4·86	4·75	3·91	7·76	5·06
City	3·11	3·32	4·58	4·01	5·11	4·03

The cases have, as usual, been scattered somewhat irregularly over the City, some wards suffering much more than others. The incidence rate was highest in St. George's Ward and lowest in Ladywood. It is noticeable that from year to year the cases differ considerably in distribution, the Wards suffering most in one year frequently escaping lightly in others.

Source of infection in scarlet fever.

The experience of past years as to the sources from which those attacked derive their infection has been repeated in 1909. That is to say, in the large majority of cases no history of personal contact with previous sufferers or carriers is obtained on investigation.

In all instances the milk supplies of scarlet fever cases have been recorded and examined, but there has been no evidence of any spread of the disease through this channel.

Careful attention has again been paid to the question of the transmission of the disease by school-contact. In a small percentage of instances it appears probable that the infection has been caught at school from an undiagnosed or commencing case, but it seems clear that schools have played only a subsidiary part in the spread of the disease. Very often when a particular school has appeared to be suffering more than others, the explanation is found in the fact that the disease is more than usually prevalent in the district in which the children attending that school reside. At Nechells school, 44 cases occurred during September, October, November, and December, and during October there was evidence that some of the cases were arising from contagion in the girls' department.

Scarlet fever and school attendance.

All patients suffering from scarlet fever, and all children from houses where a case of scarlet fever has occurred are excluded from school. When the case is removed to hospital the contacts are excluded from school for a quarantine period of 10 days after the house has been disinfected. But if the case is nursed at home the contacts are excluded from school throughout the period of the patient's isolation, and for a further quarantine period of 10 days after recovery of the patient and disinfection of the house. Thus the system of home isolation of the disease has the effect of keeping contacts from school for a much longer period than when the patient is removed to hospital. In all cases when the patient himself is a school-child, he is excluded for 10 days after his return from hospital, or, if isolated at home, after the disinfection subsequent upon his recovery.

During the year 1909, there were 2,591 contact school-children from elementary schools in the City. Of these 158 were not excluded from school owing to the fact that the whole of their exclusion period fell within school-holidays. The remaining 2,433 school-children were excluded for a total period of 23,000 school-days (about). This figure is expressed as actual school-days, and does not include the Saturdays and Sundays of the exclusion-periods; nor does it include such part of their exclusion-periods as fell within the school-holidays.

In addition to this period of exclusion, which was officially enforced, in many instances children were kept from school by their parents for further days before and after the official period of exclusion.

The number of children from elementary schools in the City who actually suffered from scarlet fever during the year 1909 was 1,658. These were all excluded for 10 days longer than their period of isolation, which varied from six weeks upwards.

Scarlet fever in institutions.

There was no extensive outbreak in any public institution in the City, the total number of institution cases being 69. No more than a few cases have occurred at any particular outbreak. In consequence of a recurrence of cases during October (five in number) at a charity school for girls, the Christmas holidays were lengthened by closing a few weeks earlier, and no further cases have arisen since the re-opening of the school.

Scarlet fever cases removed to hospital.

Of the corrected total of cases of scarlet fever notified during the year, 78 per cent. have been treated in the City Hospitals, as compared with 86 per cent. during the previous year. This falling off is due to the encouragement that has been given to medical men and patients' friends to

nurse the cases at home whenever there is suitable accommodation for isolation. In addition to the letter circulated in 1908 to members of the medical profession (and published in last year's report) the following letter has this year been sent to each medical practitioner in the City :— Scarlet fever cases removed to hospital—(*continued*).

"CITY OF BIRMINGHAM,
"Health Department,
"The Council House,
"14*th September*, 1909.

"Dear Sir,

"Owing to the large increase in the number of cases of scarlet fever it will be impossible to admit to the City Hospital the whole of the cases notified and it will, therefore, be necessary to discriminate with a view to admitting only those cases in which the greatest urgency for hospital isolation exists.

"I shall be obliged, therefore, if you will refrain from advising hospital isolation of patients who may safely be treated at home. I have given instructions for each case to be investigated before removal to hospital, and owing to this there will be during the present period of pressure rather a longer delay between the receipt of the notification and the removal of the patient to hospital, if this is found to be necessary.

"Yours faithfully,

"JOHN ROBERTSON."

This letter was followed by a considerable increase in the number of home-isolated cases.

The increased number of cases isolated in their own homes lends additional interest to this year's contribution to the statistics which have been compiled in Birmingham during recent years comparing the incidence of secondary cases in home-isolated and hospital-isolated patients respectively. Moreover, the increase in the number of cases kept at home is mainly due to the inclusion in the home-isolated group of a greater proportion of patients of a poorer class than those which in previous years have formed the bulk of those isolated in this way.

The total number of cases notified, and the number removed to the City Hospitals, together with the percentage, are shown in the following table. From 1907 onwards the figures have been corrected for errors in diagnosis.

Scarlet fever cases removed to hospital (*continued*).

	Cases Notified.	Cases Removed.	Percentage
1893 ...	1614 ...	1339 ...	83%
1894 ...	1788 ...	1539 ...	86%
1895 ...	2964 ...	2595 ...	88%
1896 ...	*3389 ...	*2812 ...	83%
1897 ...	1929 ...	1641 ...	85%
1898 ...	1320 ...	1083 ...	82%
1899 ...	1255 ...	1052 ...	84%
1900 ...	2063 ...	1814 ...	88%
1901 ...	3314 ...	2959 ...	89%
1902 ...	*5044 ...	*4534 ...	90%
1903 ...	2835 ...	2455 ...	87%
1904 ...	1659 ...	1437 ...	87%
1905 ...	1684 ...	1489 ...	88%
1906 ...	14 ...	1557 ...	86%
1907 ...	2522 ...	2186 ...	87%
1908 ...	*2275 ...	*1962 ...	86%
1909 ...	2871 ...	2237 ...	78%

*53 weeks.

I.—SECONDARY CASES IN INFECTED HOUSES.

Secondary cases in infected houses.

The enquiry which has been made during the past five years into the secondary cases of scarlet fever in infected houses has been continued during the present year.

The chief object is to ascertain what influence in bulk is exerted upon the occurrence of secondary cases in infected houses by the system of hospital isolation of scarlet fever.

The details as to the number of occupants of the houses and their scarlet fever history, the number of rooms in the houses, etc., have been gathered from careful enquiry and inspection at each house.

From the total number of Birmingham cases notified all institution cases and all cases which have turned out to have been erroneously diagnosed have been excluded, so that this enquiry deals only with true cases of scarlet fever in houses.

Such a definition of "secondary case" has been adopted this year that in every house where two or more cases have occurred, all except one are treated as secondary (except, of course, that a new case of scarlet fever occurring in a house several months after a previous case has recovered is treated as primary).

The definition adopted of a "susceptible person" is one who has not had scarlet fever, as determined by interrogation.

All persons under the age of 15 years have been taken as children for the purpose of this enquiry.

Secondary cases in infected houses (*continued*).

In the following table are given figures showing the number and proportion of houses from which the primary case was treated in hospital on the one hand, and at home on the other hand; together with the number and proportion of houses in which no secondary cases occurred in each of these two groups.

RECURRENCE OF SCARLET FEVER IN HOUSES (1904-1909).

		1904.	1905.	1906.	1907.	1908.	1909	Six years 1904-9.
	Number of cases	1473	1532	1686	2298	2147	**2725**	11945
	Number of houses involved	1235	1221	1382	1947	1794	**2166**	9745
	Average number of cases per house	1·19	1·25	1·2	1·2	1·2	**1·3**	1·2
	Number of cases removed to hospital	1253	1334	1431	2077	1861	**2133**	10089
	Proportion of cases removed to hospital	85%	87·1%	85·2%	87·0%	86·7%	**78·3%**	84·5%
Total cases	Number of houses from which cases were removed ...	1044	1058	1175	1694	1537	**1687**	8195
	Proportion of houses from which cases were removed	84·5%	86·6%	85·0%	87·0%	85·7%	**77·9%**	84·1%
	Number of houses in which primary cases only occurred	1042	1018	1165	1665	1478	**1744**	8112
	Proportion of houses in which primary cases only occurred	84·4%	83·4%	84·3%	85·5%	82·4%	**80·5%**	83·2%
Hospital cases	Number of houses from which primary cases went to hospital	1026	1054	1155	1685	1537	**1687**	8144
	Number of such houses in which no cases followed ...	868	864	979	1456	1249	**1327**	6743
	Proportion of such houses in which no cases followed ...	84·6%	81·9%	84·7%	86·4%	81·2%	**78·6%**	82·8%
Home cases	Number of houses in which primary cases were kept at home	190	167	211	237	257	**479**	1541
	Number of such houses in which no cases followed ...	174	154	186	209	229	**417**	1369
	Proportion of such houses in which no cases followed ...	91·5%	92·2%	88·15%	88·2%	89·1%	**87·0%**	88·9%

Secondary cases in infected houses—(*continued*).

The following tables indicate in each group the size of the houses involved, together with the number of the inmates and their character as to susceptibility.

INMATES OF THE TWO GROUPS OF HOUSES.

	Houses from which 1st Case went to Hospital.	Houses in which 1st Case was kept at Home.
1904.		
Average number of persons per house ...	4·7	5·0
Proportion of children to total inmates ...	41·2%	39·4%
Average number of rooms per house ...	4·6	6·3
Average number of persons per room ...	1·0	0·8
Average number of persons per bedroom ...	1·8	1·4
1905.		
Average number of persons per house ...	5·8	5·0
Proportion of children to total inmates ...	50·2%	40·9%
Average number of rooms per house ...	4·5	6·2
Average number of persons per room ...	1·3	0·8
Average number of persons per bedroom ...	2·3	1·4
1906.		
Average number of persons per house ...	4·7	4·0
Proportion of children to total inmates ...	41·02%	28·8%
Average number of rooms per house ...	4·7	6·2
Average number of persons per room ...	1·01	0·6
Average number of persons per bedroom ...	1·77	1·2
1907.		
Average number of persons per house ...	6·0	3·9
Proportion of children to total inmates ...	49·2%	38·6%
Average number of rooms per house ...	4·7	6·1
Average number of persons per room ...	1·2	0·6
Average number of persons per bedroom ...	1·8	1·4
1908.		
Average number of persons per house ...	5·8	5·0
Proportion of children to total inmates ...	51·6%	40·0%
Average number of rooms per house ...	4·6	6·0
Average number of persons per room ...	1·3	0·8
Average number of persons per bedroom ...	2·2	1·5
1909.		
Average number of persons per house ...	6·0	5·1
Proportion of children to total inmates ...	51·2%	40·7%
Average number of rooms per house ...	4·6	5·9
Average number of persons per room ...	1·3	0·9
Average number of persons per bedroom ...	2·3	1·6
Six Years, 1904-1909.		
Average number of persons per house ...	5·5	4·7
Proportion of children to total inmates ...	47·4%	38·1%
Average number of rooms per house ...	4·6	6·1
Average number of persons per room ...	1·2	0·7
Average number of persons per bedroom ...	2·0	1·4

SUSCEPTIBLE PERSONS IN THE TWO GROUPS OF HOUSES.

Secondary cases in infected houses— (*continued*).

HOUSES.

	1st Case removed to Hospital.						1st Case kept at Home.					
	1904	1905	1906	1907	1908	1909	1904	1905	1906	1907	1908	1909
Proportion of inmates constituted by susceptible children	37·3 %	31·0 %	37·1 %	34·1 %	30·9 %	32·5%	16·8 %	20·4 %	24·4 %	23·0 %	17·8 %	20·6%
Average number of susceptible children remaining after each instance	1·76	1·30	1·76	2·05	2·2	1·9	0·84	1·01	0·90	0·90	1·7	1·1
Average number of susceptible persons (all ages) remaining after each instance	3·96	4·22	4·18	4·2	4·1	4·4	2·97	3·18	3·2	3·6	3·3	3·5
Proportion of instances in which susceptible children remained ..	80·8 %	82·1%	81·1 %	82·8 %	80·0 %	82·8%	52·1 %	51·5 %	55·9 %	57·4 %	50·6 %	59·7
Proportion of instances in which susceptible persons (all ages) remained	99·2 %	99·5 %	98·8 %	98·9 %	98·9 %	99·4%	94·2 %	97·0 %	92·9 %	96·1 %	97·2 %	97·5%

1904-09.

	1st Case removed to Hospital.	1st Case kept at Home.
Proportion of inmates constituted by susceptible children	33·8 %	20·5 %
Average number of susceptible children remaining after each instance ..	1·9	1·1
Average number of susceptible persons (all ages) remaining after each instance	4·2	3·3
Proportion of instances in which susceptible children remained	81·6 %	54·5 %
Proportion of instances in which susceptible persons (all ages) remained..	99·1 %	95·8 %

It will be noticed that a larger proportion of cases were isolated at home this year, for reasons mentioned above. This widening of the basis of the figures relating to home-isolated cases adds emphasis to the results.

Secondary cases in infected houses—*continued*.

On looking at the percentage of houses in which no secondary case occurred, it will be seen that as in previous years a higher proportion is shown where the first case was treated at home than where it was removed to hospital, the figures being 87·0 in the former and 78·6 in the latter.

As has been remarked in former years, some of this difference might be due to the difference in the average home circumstances in the two groups of cases.

The differences are indicated by the facts that in the home cases there were (on the average) more rooms per house and less persons per house, per room, and per bedroom than in the houses from which the first case was removed to hospital. There were, moreover, on the average less susceptible persons and children remaining, and a less percentage of houses in which susceptible children remained, in the home cases.

It is to be remembered, however, that the influence of such conditions is only partial, as is shown by the fact that scarlet fever is generally at least as easily spread in comparatively hygienic decent artizan quarters as in the slums.

An attempt has been made this year to eliminate the influence of the varying numbers of susceptible people in the two classes of houses, by giving the number of secondary cases in terms of the total number of susceptible people remaining in the houses.

It has been found that :—

For hospital cases—No. of secondary cases per 1,000 susceptible persons remaining = 62·4
For home cases—No. of secondary cases per 1,000 susceptible persons remaining = 57·3

the number of susceptible people remaining being, for hospital cases 7,438 and for home cases 1,657, and the corresponding number of secondary cases being for hospital cases 464 and for home cases 95.

The proportion of total cases per 1,000 total susceptible persons was :—

234 amongst hospital treated cases.
277 „ home „

We thus arrive at the conclusion that allowance having been made for the different number of the susceptible people the number of secondary cases after primary cases treated at home is less in proportion than that after primary cases treated in hospital.

Secondary cases in infected houses—*(continued).*

The cases have been further analysed with a view to finding whether similar results are obtained after making allowance for the other disturbing factor, viz., the size of the house and the associated social conditions.

For this purpose the cases have been divided into those occurring in houses with five or a less number of rooms on the one hand, and in houses with six or more rooms on the other.

It is then found that in houses with five or less rooms :—

Among Hospital cases—number of secondary cases per 1,000 susceptible persons remaining = 62·0.
Among Home cases—number of secondary cases per 1,000 susceptible persons remaining = 59·5.

In houses with six or more rooms the figures are as follows :—

Among Hospital cases—number of secondary cases per 1,000 susceptible persons remaining = 63·1.
Among Home cases—number of secondary cases per 1,000 susceptible persons remaining = 56·1.

The total number of the smaller houses involved in the above figures was 1,368, and of the larger houses 798.

It is of interest to add to these last figures the following table :—

	Average number of susceptible persons per house.	
	Houses with six rooms or more.	Houses with five rooms or less.
Removed to hospital ...	4·9	4·2
Kept at home	3·6	3·2

The figures for this year appear to show that where the patient can be kept in a separate room (which was the standard adopted during the year) isolation may be carried out at home without any increase, in the bulk, in the number of secondary cases.

The mortality rate for scarlet fever for patients isolated in hospital was 4·0 per cent., as compared with 2·9 per cent. for those treated at home.

II.—SO-CALLED " RETURN " CASES OF SCARLET FEVER.

Return cases of scarlet fever.

The special investigation which has been made in Birmingham during the past five years into the question of " return " cases has been continued unaltered during 1909. For the statistical results of this enquiry only cases occurring within 28 days of the discharge of the primary case from hospital or other institution are included under the heading of " return " cases.

During the year there have been 148 cases notified as occurring after the return from isolation of a previous case of scarlet fever from the same house, compared with 124

Return cases of scarlet fever (*continued.*)

last year; and of these 133 have had relation with 117 patients returning from Little Bromwich Hospital, nine with seven patients from Lodge Road Hospital, four with three patients from hospitals outside the City, and two with one patient who had been isolated at home.

But of these 148 possible "return" cases 34 have to be excluded for the following reasons :—

Secondary case occurred more than 28 days after the discharge of the primary case	25
Infecting case not scarlet fever	4
Return case not scarlet fever	5

This leaves 114 as the corrected number of "return" cases, following upon 101 possible "infecting" cases who were freed from isolation during 1909 or the latter part of 1908. These corrected "return" and infecting cases were made up as follows :—

101 "return" cases having relation with 90 "infecting" cases from Little Bromwich Hospital.
7 "return" cases having relation with 7 "infecting" cases from Lodge Road Hospital.
4 "return" cases having relation with 3 "infecting" cases from hospitals outside the City.
2 "return" cases having relation with 1 "infecting" case treated at home.

The number of days between the first contact with the "infecting" case and the occurrence of the "return" case was ascertained in each instance, and the "return" cases may be grouped as follows, according to the number of days :—

After an interval of	1	day	...	...	1	case.
,,	,,	2	days	...	...	3	cases.
,,	,,	3	,,	...	...	6	,,
,,	,,	4	,,	...	...	9	,,
,,	,,	5	,,	...	...	10	,,
,,	,,	6	,,	...	...	4	,,
,,	,,	7	,,	...	...	7	,,
,,	,,	8	,,	...	...	5	,,
,,	,,	9	,,	...	...	8	,,
,,	,,	10	,,	...	...	8	,,
,,	,,	11	,,	...	...	5	,,
,,	,,	12	,,	...	...	8	,,
,,	,,	13	,,	...	...	2	,,
,,	,,	14	,,	...	...	1	,,
,,	,,	15	,,	...	...	1	case.
,,	,,	16	,,	...	...	2	cases.
,,	,,	17	,,	...	...	1	case.
,,	,,	18	,,	...	...	4	cases,
,,	,,	19	,,	...	...	4	,,
,,	,,	20	,,	...	...	2	,,
,,	,,	21	,,	...	...	4	,,
,,	,,	22	,,	...	...	2	,,
,,	,,	23	,,	...	...	3	,,
,,	,,	24	,,	...	...	2	,,
,,	,,	25	,,	...	...	2	,,
,,	,,	26	,,	...	...	2	,,
,,	,,	27	,,	...	...	1	case.
,,	,,	28	,,	...	...	1	,,

Return cases of scarlet fever—*(continued)*.

The enquiries into complications occurring during isolation and morbid conditions after discharge in the "infecting" cases were carried out as in former years, with the following results :—

Complication.	While in Hospital.	After Discharge.
Congestion of fauces	—	19
Enlargement of tonsils	11	29
Enlargement of cervical glands	7	46
Nasal discharge	17	41
Otorrhœa	11	11
Albuminuria	6	--
Nephritis	3	--
Sores on face, head, or hands (including sore nostril without nasal discharge)...	28	16
Other septic skin lesions	5	2
Ulceration of mouth	3	2
Abscesses	2	1
Rheumatism	2	1
Desquamation	—	6
Adenoids	—	2
Ringworm	—	4
Intercurrent infectious diseases	2*	2
Wounds	4	—
Other complications	9	6

*Not including two cases of scarlet fever complicating diphtheria and three cases admitted to hospital with scarlet fever and diphtheria simultaneously

The length of time during which the "infecting" cases were kept isolated (in hospital or at home) is shown in the following table :—

1	case	was	isolated	for 39 days (at home).	
41	cases	were	isolated	for between 41 and 50	days.
32	,,	,,	,,	51 and 60	,,
7	,,	,,	,,	61 and 70	,,
6	,,	,,	,,	71 and 80	,,
1	,,	,,	,,	81 and 90	,,
6	,,	,,	,,	91 and 100	,,
7	,,	,,	over	100	,,

All parents are advised to take certain precautions when the children return home from either of the hospitals, these precautions being devised chiefly to prevent too close contact between the returning case and the rest of the family. In most instances an attempt is made to carry out this advice, though in the poorer houses it is practically impossible to keep the children apart. In a considerable proportion of the investigations into "return" cases the parents state that they have kept separate towels, etc., for the returning child; though these investigations are confined to those instances where the attempt to prevent the occurrence of a "return" case has been unsuccessful.

Return cases of scarlet fever (*continued*).

Of the 114 "return" cases 86 were said not to have slept in the same bedroom as the "infecting" case, while 28 had slept in the same bedroom. Of these 28, in 18 instances the "return" case had been sleeping in a separate bed from the "infecting" case, and in only 10 cases had the two patients been sleeping in the same bed.

In view of these facts there can be no doubt that in many houses where "return" cases have occurred reasonable care has been exerted by the parents to avoid this unfortunate accident.

The above statistics respecting "return" cases do not include 10 cases of scarlet fever which occurred in houses to which a person had recently returned from hospital after being isolated for diphtheria uncomplicated by scarlet fever. Nor do they include the four cases of scarlet fever which occurred in one family under the following circumstances:—A child was erroneously notified as suffering from scaret fever and sent to Little Bromwich Hospital. There he was isolated and discharged as not suffering from scarlet fever. Within a few days after returning home, however, he developed scarlet fever, and four other members of the family contracted the disease from this infection.

In almost all the instances where possibly infections morbid conditions are found at home in the "infecting" case, these conditions have developed after his return from hospital, not being present at his discharge. For example, though nasal discharge was found at home in 41 cases, and otorrhœa in 11, at the time of discharge from hospital only five had nasal discharge and one otorrhœa.

III.—CORRECTED DIAGNOSIS.

Corrected diagnosis in scarlet fever.

Of the cases admitted to the City Hospitals as scarlet fever during 1909, 109* were found ultimately to require some revision of diagnosis.

This represents 5 per cent. of the total number admitted. The corresponding figures in previous years have been 7 per cent. in 1908, 2 per cent. in 1907, 3 per cent. in 1906, 5 per cent. in 1905, and 9 per cent. in 1904.

Of these 109, 17 cases developed scarlet fever (16 per cent.), 13 of the 109 cases died in hospital (12 per cent.).

Of the 17 patients who caught scarlet fever in hospital, three resulted in death (18 per cent.).

* Included in this figure and the statistics following are cases in which the diagnosis was revised in hospital to scarlet fever + diphtheria.

These figures serve to show the risks attending the sending into a scarlet fever hospital of patients not suffering from that disease. Corrected diagnosis in scarlet fever—(*continued*)

The following is a list and classification of cases whose diagnosis was revised while in hospital.

Corrected Diagnosis.	No. of Cases.	No. which developed Scarlet Fever in Hospital.	Died.
Measles	14	1	2
Chickenpox	3	—	—
Whooping Cough	2	—	—
German Measles	1	—	—
Diphtheria	1	—	—
Typhoid Fever	1	—	—
Tonsilitis	14	4	1
Bronchitis	4	—	3
Pneumonia	2	—	2
Scarlet Fever and Diphtheria ..	5	—	—
Other diseases	12	4	5
Total	59	9	13
No definite disease	50	8	—
Total	109	17	13

A few revisions of diagnosis of cases of so-called scarlet fever treated at home have been communicated to me by the practitioner in charge of the case, but probably in most cases such errors of diagnosis pass without coming to the knowledge of the department.

In any case where a practitioner is in charge of a suspicious case of scarlet fever (or other infectious disease) of which he is uncertain about the diagnosis, he can obtain a consultation with the Medical Officer of Health or his assistant, or a doctor from the City Hospitals, on his making application to the Medical Officer of Health.

Advantage has been taken of this on a number of occasions during the year.

DIPHTHERIA.

The number of cases of diphtheria notified during the year 1909 was 687. This figure is arrived at after making the necessary corrections for cases in which the diagnosis of diphtheria was found afterwards to be incorrect. Diphtheria.

The number of deaths was 89, equal to a case-mortality of 13 per cent.

Diphtheria (*continued*).

These figures are given in the following table, together with those for the previous years :—

DIPHTHERIA.

	Cases notified.	Deaths registered.	Case-mortality, per cent.
1892 ...	533 ...	102 ...	19
1893 ...	387 ...	83 ...	21
1894 ...	406 ...	91 ...	22
1895 ...	741 ...	214 ...	29
1896 ...	*1,194 ...	*293 ...	25
1897 ...	713 ...	160 ...	22
1898 ...	689 ...	132 ...	19
1899 ...	720 ...	147 ...	20
1900 ...	542 ...	77 ...	14
1901 ...	533 ...	85 ...	16
1902 ...	*787 ...	*130 ...	17
1903 ...	884 ...	135 ...	15
1904 ...	630 ...	115 ...	18
1905 ...	698 ...	98 ...	14
1906 ...	817 ...	93 ...	11
1907 ...	1012 ...	100 ...	10
1908 ...	*794 ...	*105 ...	13
1909 ...	687 ...	89 ...	13

*53 weeks.

It will be seen from the above table that there has been less diphtheria than in the previous year (1908), and still less than in 1907, when the disease was comparatively very prevalent.

The mortality rate is exactly the same as last year.

There are no signs of any permanent decline in the disease during the period of compulsory notification.

The most satisfactory feature of the statistics during that period is the apparently permanent improvement in the case-mortality during the recent few years over the closing years of the last century.

No doubt the actual percentage mortality amongst all sufferers from diphtheritic infection of the throat and nose is considerably less than the records show, because it is certain that most classes of the population do not seek medical advice for a mere sore throat of any but considerable severity, and such a slight illness is the only manifestation of the mildest form of diphtheria. The absence of such cases from the returns (and also of clinically unrecognizable cases seen by medical men but not bacteriologically examined) must produce considerable artificial inflation of the case-mortality.

But these unrecognised cases play a very important part in the spread of the disease. For, though causing perhaps little inconvenience to the patient himself, such illness may produce considerable effect in spreading the disease. Indeed, evidence of this fact is not infrequently forthcoming.

Such dissemination of diphtheritic infection must exercise an evil influence in opposition to the influence of the compulsory isolation of notified cases, and is probably one of the chief reasons why such isolation has failed to produce any marked diminution in the amount of diphtheria. Diphtheria—(*continued*).

The death-rate per 1,000 of the population from diphtheria during 1909 was 0·16, and this is shown in the following table in comparison with the corresponding figures from 1871, a longer period than is available for the incidence rate and case-mortality.

DIPHTHERIA DEATH-RATES.

1871	...	·22		1891	...	·09	
1872	...	·25		1892	...	·21	
1873	...	·31	Average	1893	...	·17	Average
1874	...	·21	·23	1894	...	·18	·22
1875	...	·16		1895	...	·43	
1876	...	·16		1896	...	·58	
1877	...	·14		1897	...	·32	
1878	...	·22	Average	1898	...	·26	Average
1879	...	·18	·17	1899	...	·29	·32
1880	...	·13		1900	...	·15	
1881	...	·14		1901	...	·16	
1882	...	·12		1902	...	·24	
1883	...	·11	Average	1903	...	·25	Average
1884	...	·10	·12	1904	...	·21	·21
1885	...	·11		1905	...	·18	
1886	...	·18		1906	...	·17	
1887	...	·13		1907	...	·18	
1888	...	·09	Average	1908	...	·18	
1889	...	·12	·13	1909	...	·16	
1890	...	·14					

The sickness rate for diphtheria during 1909 was 1·22 per 1,000 of the population, and this figure is shown in the following table, together with the corresponding rate for each of the separate wards in the City. Diphtheria in wards.

	1905.	1906.	1907.	1908.	1909.	Mean of Five Years.
Rotton Park ...	2·29	1·36	1·77	1·48	1·28	1·64
All Saints' ...	0·43	1·69	2·34	1·70	1·25	1·48
Ladywood ...	1·69	2·43	2·14	1·61	1·03	1·78
St. Paul's ...	1·22	1·79	1·59	1·63	1·59	1·56
St. George's ...	1·67	1·17	3·19	1·59	1·33	1·79
St. Stephen's ...	1·50	2·47	2·54	1·74	1·45	1·94
St. Mary's ...	1·16	1·44	2·24	1·43	1·38	1·53
St. Bartholomew's	1·33	1·09	2·04	1·10	1·59	1·43
Market Hall ...	2·43	1·38	1·23	1·93	1·37	1·67
St. Thomas' ...	0·59	1·05	2·02	1·20	0·87	1·15
St. Martin's ...	0·97	1·09	2·45	2·05	1·72	1·66
Edgbaston and Harborne ...	0·87	0·61	1·26	1·43	0·69	0·97
Deritend ...	1·01	1·14	1·34	1·19	1·69	1·27
Bordesley ...	1·06	1·84	1·41	1·19	1·16	1·33
Duddeston ...	2·52	2·22	2·73	1·53	1·43	2·09
Nechells ...	1·74	1·31	1·61	1·34	1·30	1·46
Balsall Heath	0·97	1·56	1·54	1·42	1·14	1·33
Saltley ...	0·85	1·44	1·25	1·34	1·19	1·21
City	1·29	1·50	1·84	1·40	1·22	1·45

Diphtheria in wards (*continued*).

St. Martin's Ward has the highest incidence rate, as it had in 1908, but the excess over the other wards is less marked than in 1908. The Edgbaston and Harborne Ward rate is the lowest.

Spread of diphtheria.

No special factor has appeared during the year to have any marked influence in disseminating the disease.

The milk supply of each infected house has been carefully recorded and studied, and no evidence of any carriage of infection by milk has been shown. Nor has there been any marked prevalence of the disease at any school, and no evidence has been forthcoming of any spread of the disease through the agency of schools, although careful records have been kept of school cases.

On enquiries being made at the home of each diphtheria case as to possible sources from which the disease may have arisen the result is very similar to that obtained with scarlet fever. That is to say, in the large majority of cases the patient and friends can give no history whatever of contact with previous cases of the disease.

There have been 49 secondary cases of diphtheria occurring in houses in which the primary case occurred in 1909. Of these only one arose within 28 days after the return of the primary case from hospital.

At one hospital in the City two cases of diphtheria occurred during October and were removed to the City hospital. There had previously been occasional cases of diphtheria at the institution, the last being a nurse during August. Cultures were taken of all the patients and staff, and seven persons (in addition to the patients removed) were found to have diphtheria bacilli in their throats. These were all isolated until no more diphtheria bacilli could be obtained on taking swabs. In all 146 cultures were taken. Fifty days elapsed before the last throat was clear. No other cause except personal contact was assigned to the outbreak, and the hospital was closed throughout the whole time during which any individual was found to be harbouring the bacilli.

Diphtheria mortality in hospital and at home.

Of the 687 actual cases of diphtheria, 141 cases were treated in the City hospital. In addition to these there were 53 patients admitted who were subsequently found not to be suffering from diphtheria.

The mortality rate amongst the cases at the City hospital was 10·9 per cent., while that of the cases treated at home or in some other institution was 14·6 per cent.

It must be remembered in the consideration of these two mortality rates that in hospital the total number of cases is carefully revised so as to exclude all cases which are not genuine diphtheria: while amongst home-treated cases practically no information is obtained by the department as to such revision of diagnosis. Thus the two mortality rates given are not strictly comparable. It is reasonable to assume that if the home cases could be

corrected on the same basis as hospital cases, the mortality rate for the home cases would appear still greater.

Diphtheria and bacteriological examinations.

During the year 706 swabs were examined for diphtheria bacilli by the University of Birmingham for medical practitioners in the City at the expense of the Corporation, in addition to the 146 swabs examined in connection with the small outbreak of diphtheria at the Institution above mentioned. Amongst these 706 instances diphtheria bacilli were reported as being present in 220 instances, absent in 484 instances, and doubtful in two instances.

Anti-toxin supplied.

The doses of anti-toxin supplied by the Corporation to doctors during the year numbered 384. As a rule two doses were sent for the use of one patient.

WHOOPING COUGH.

Whooping cough.

The mortality rate in regard to Whooping Cough for 1909, as compared with previous years, is set out in the table below. There were 152 deaths from this disease, as against 313 in the previous year, and 188 in 1907. It will be noted that the year under review was a relatively favourable one from the point of view of mortality from whooping cough.

DEATH-RATE FROM WHOOPING COUGH.

1871	...	·91		1891	...	·66	
1872	...	·75		1892	...	·59	
1873	...	·48	Average	1893	...	·66	Average
1874	...	·67	·80	1894	...	·44	·54
1875	...	1·20		1895	...	·35	
1876	...	·51		1896	...	·76	
1877	...	·98		1897	...	·45	
1878	...	1·19	Average	1898	...	·50	Average
1879	...	·97	·84	1899	...	·33	·52
1880	...	·55		1900	...	·58	
1881	...	·90		1901	...	·42	
1882	...	·79		1902	...	·50	
1883	...	·43	Average	1903	...	·17	Average
1884	...	·70	·69	1904	...	·87	·45
1885	...	·61		1905	...	·29	
1886	...	·23		1906	...	·46	
1887	...	·91		1907	...	·34	
1888	...	·56	Average	1908	...	·55	
1889	...	·66	·57	1909	...	·27	
1890	...	·47					

The ages at death of the 152 persons who died were as follows :—

Under 1 year	54
1 and under 2 years	50
2 ,, 3 ,, ...	27
3 ,, 4 ,, ...	10
4 ,, 5 ,, ...	7
All under 5 ,, ...	148
5 and under 10	3
All over 10	1
Total ...	152

TYPHOID FEVER.

Typhoid fever

The number of cases of typhoid fever notified during the year 1909 was 95, equal to a sickness-rate of ·17 per 1,000 of the population. This figure is arrived at after making certain corrections for cases in which the diagnosis of typhoid fever was found afterwards to be incorrect.

The number of deaths was 22, giving a case-mortality of 23 per cent., and a typhoid death-rate of ·04 per 1,000.

The following table indicates the number of cases and deaths, and the fatality in each year since 1899 :—

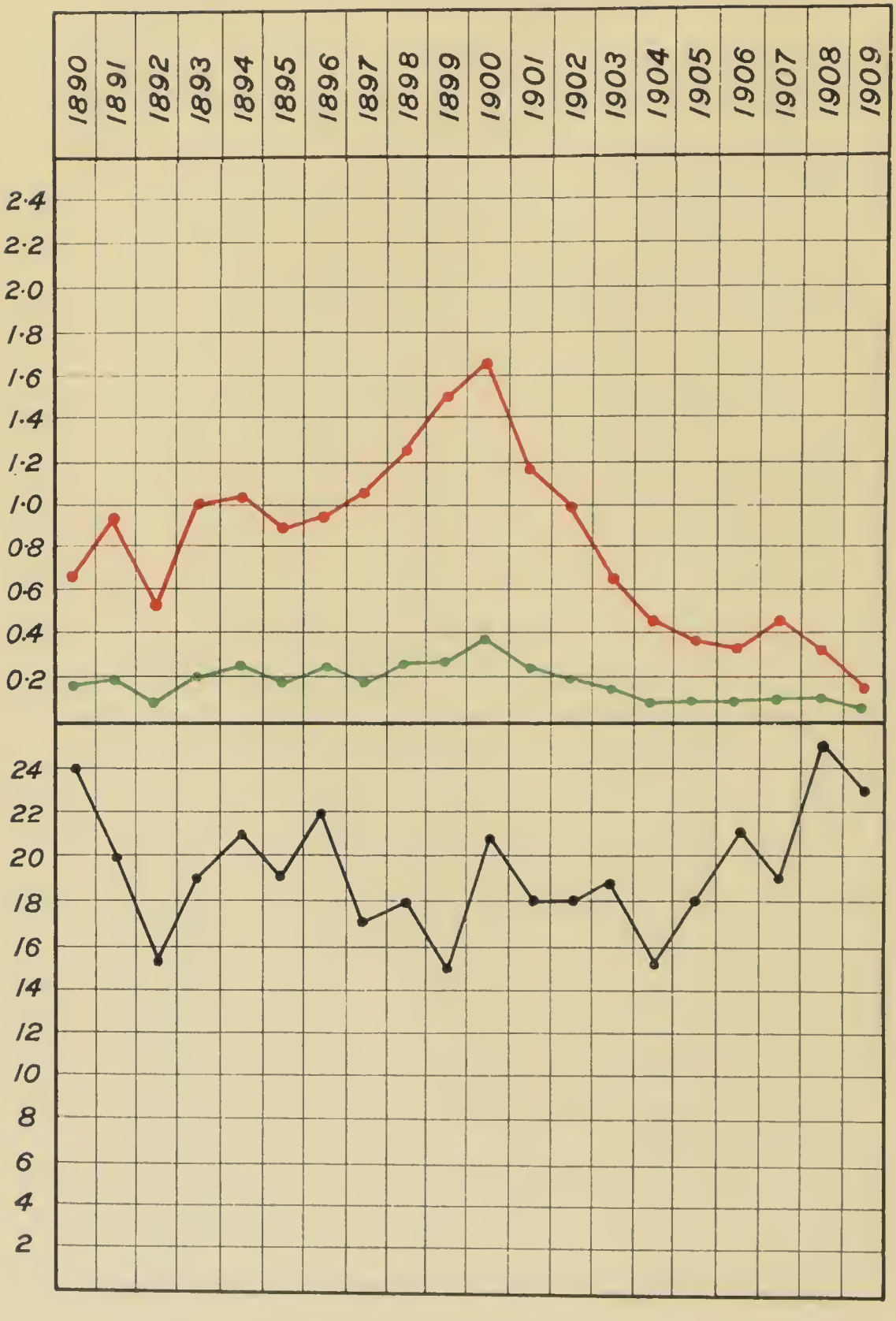
Years	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
Notified Cases	779	851	615	544*	348	248	209	191	248	193	95
Deaths	119	179	111	100*	66	36	38	40	48	49*	22
Percentage Mortality	15	21	18	18	19	15	18	21	19	25	23

*53 weeks.

The following table gives the sickness rate and death-rate for typhoid fever, together with certain meteorological conditions since 1887 :—

	TYPHOID FEVER.		Mean Temperature, degrees Fah., in 3rd Quarter.	Rainfall in inches for year.
	Death-rate.	Sickness-rate.		
1887	·17	—	58·9	19·80
1888	·14	—	55·7	24·62
1889	·09	—	57·6	24·94
1890	·14	·66	58·0	22·10
1891	·18	·93	57 3	31·14
1892	·08	·54	57·0	25·60
1893	·19	1·00	60·0	20·76
1894	·21	1·04	54·9	25·52
1895	·17	·88	59·6	24·89
1896	·21	·95	57·7	22·27
1897	·18	1·06	58·3	28·21
1898	·22	1·25	58·7	20·45
1899	·23	1·52	61·2	25·12
1900	·35	1·64	60·2	29·09
1901	·21	1·18	60·7	22·64
1902	·19	1·01	57·1	25·98
1903	·12	·65	57·4	33·83
1904	·07	·46	58·8	21·94
1905	·07	·59	58·4	22·30
1906	·07	·35	60·9	26·56
1907	·09	·45	57·5	28 86
1908	·09	·34	57·9	26·51
1909	·04	·17	57·6	27·73

CHART No 3.
TYPHOID FEVER.



The accompanying chart gives the death-rate and sickness-rate for the years 1890-1909. Typhoid fever—(*continued*).

It will be seen that the sickness-rate and death-rate for this year are the lowest that have been recorded.

The number of cases is only half the number in 1906 and 1908 respectively, which were previously the two years with the smallest typhoid incidence.

The prevailing severe type of the disease remains at about the same high level as in 1908, nearly a quarter of the total number of cases succumbing to the disease.

It will be seen from reference to the chart that after a period of more or less steady increase in the incidence rate of typhoid extending over a number of years,and culminating in the year 1900, there has since that date been a steady and marked decline in the number of cases of this disease. So noticeable has this decline been, that in the year under consideration the incidence rate has been barely more than one-tenth of that of 1900. The fall has, moreover, with the exception of a slight rise in 1907, been perfectly steady year after year, and is most marked in 1909, the rate in that year being only half that of the previous year.

The typhoid death-rate has shown a similar rise and fall, the maximum being reached in 1900. But the high case-mortality of the past few years has tended to keep this rate higher in proportion than the incidence rate.

Assuming that typhoid fever is due directly or indirectly to excremental contamination, it is extremely probable that the recent subsidence of the disease has been caused by improved provision for avoiding filth conditions in the neighbourhood of dwellings, especially in poorer parts of the City. Typhoid fever and filth conditions.

In last year's report the question of the relation between the disease and the conversion of pan-closets into properly constructed water-closets was dealt with at some length. The figures are reproduced in the following table :—

	No. of Pan-Closets converted.	No. of cases of Typhoid Fever reported.
1897	105	533
1898	210	637
1899	199	779
1900	275	851
1901	486	615
1902	871	544
1903	2395	348
1904	2283	248
1905	3580	209
1906	3183	191
1907	2643	248
1908	2426	193
1909	1736	95

Typhoid fever and filth conditions—(*continued*).

The above figures apply to closets converted at the instance of the Health Department, and do not include those which were dealt with by the owners without coming to our knowledge.

There are still remaining over 7,000 pan closets in the City, but the number has been reduced since 1900 from over 32,000.

Other measures for the prevention of soil pollution with excremental matter have no doubt also greatly contributed to the reduction of typhoid fever. The paving of the courts, and the work of the Court Cleansing Staff in cleansing the courts and swilling out the closets and ashplaces, must have had much influence in keeping the immediate surroundings of the dwellings of the poorer people free from such pollution.

The work of the Health Visitors and other agencies in the homes themselves, and the Lectures given in connection with the Athletic Institute and other societies, by educating the people to greater wholesomeness of habit (in short, cleanliness), are not to be lost sight of in this connection.

It is noteworthy that, unlike that other filth disease, diarrhœa, the annual figures for typhoid fever do not respond to any noticeable degree to meteorological conditions. That is to say, the hot, dry summer which so conduces to high incidence of and mortality from summer diarrhœa does not cause any corresponding increase in typhoid fever. The decline in typhoid fever from 1900 onwards has progressed without any interruption from the fatal hot, dry summer. It is striking that the years 1904 and 1906, with their high diarrhœal mortality, had no special typhoid incidence; whereas the year 1907, which was the one year in which the decline in typhoid showed an interruption, had the lowest diarrhœal mortality in recent years.

Typhoid fever in four-weekly periods.

Some analysis of last year's cases will now be made. The distribution of cases in four-weekly periods throughout the year is set out below, with the corresponding averages in the previous nineteen years:—

	1909.	Average in 19 years 1890-1908.
Four weeks ending January 25th	7	37
,, ,, February 22nd	10	35
,, ,, March 21st	4	31
,, ,, April 18th	4	30
,, ,, May 16th	10	27
,, ,, June 13th	3	21
,, ,, July 11th	6	18
,, ,, August 8th	5	20
,, ,, September 5th	10	37
,, ,, October 3rd	11	42
,, ,, October 31st	9	44
,, ,, November 28th	8	51
,, ,, December 26th	8	41

The sickness-rate of each of the separate wards of the City is given in the following table :— Typhoid fever in wards.

	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.
Rotton Park ...	·72	·47	·46	·43	·36	·32	·20	·08
All Saints' ...	·91	·47	·30	·28	·21	·48	·39	·14
Ladywood ...	1·07	·44	·36	1·01	·32	·44	·44	·12
St. Paul's ...	1·09	·71	·32	·19	·46	·35	·64	·23
St. George's ...	1·52	·44	·59	·69	·49	1·10	·26	·27
St. Stephen's ...	1·01	·59	1·06	·69	·74	·99	·76	·32
St. Mary's ...	1·00	·86	1·20	·51	·43	·75	·34	·16
St. B'thol'mew's	1·27	·79	·46	·36	·24	·69	·57	·27
Market Hall ...	·63	·32	·22	·44	·21	·11	—	·23
St. Thomas' ...	1·24	·54	·53	·11	·50	·35	·40	·23
St. Martin's ...	1·29	·46	·33	·36	·33	·46	·21	·26
Edgbaston and Harborne ...	·45	·58	·26	·29	·18	·15	·15	·15
Deritend ...	2·04	1·21	·70	·25	·42	·60	·26	·18
Bordesley ...	·92	·65	·38	·33	·35	·33	·18	·15
Duddeston ...	1·30	1·15	·51	·51	·65	·30	·32	—
Nechells ..	1·62	·98	·45	·43	·36	·59	·89	·22
Balsall Heath...	·67	·51	·42	·10	·19	·45	·22	·15
Saltley... ...	·77	·66	·38	·38	·3	·32	·20	·20

In two cases investigation showed that the infection was certainly received from a known source outside the City. In each of these instances the patient was on holiday, and others were involved in the same outbreaks, one of which was a milk outbreak from a typhoid carrier at a dairy farm, and the other of unknown origin. Spread of typhoid fever.

In six other cases the infection was probably picked up in other towns than Birmingham.

Of the other cases eight were secondary cases, as follows :—

In one house there were two cases secondary to a primary case.

In six other infected houses there was one secondary case in each house.

Two lady teachers in the same school were stricken with typhoid, the dates making it probable that one case was secondary to the other.

In the case of three hospital nurses (at different institutions) the infection was probably contracted from patients under their care.

In two other cases the occupation of the patient afforded a probable explanation of the source of infection. One of these was a youth who had to deal with cultures of typhoid bacilli, the other a man concerned with the transporting of human excreta.

Spread of typhoid fever (*continued*).

In several cases a history of the recent consumption of shell-fish was obtained as follows :—

Mussels	...	...	14 cases (one of whelks and mussels)
Oysters	...	...	1 ,,
Whelks (only)	...	...	1 ,,
Periwinkles	...	...	2 ,,

A history of eating fried fish was given by a great number of the patients, but in two cases it was stated that a few days before the onset of the illness a meal of fried fish had been followed by an attack of gastro-enteritis.

Amongst the other cases it was not possible to assign the typhoid to any special cause. It is of interest that in some cases the patient had been dealing with obstructed drains. In one instance (a boy) the parents stated that he had been bathing in a neighbouring canal.

In eight cases no history at all could be obtained.

There were only two cases in (2) institutions (other than hospitals).

During the month of January ten cases of illness occurred amongst the staff and patients at Glenthorne Asylum. These cases were suspiciously similar to typhoid fever, and were isolated in the City hospital. It was finally decided, in view of the bacteriological investigation and other facts, that the cases were not typhoid fever.

A careful watch was kept during the year upon the milk supplies of all cases, but there was no evidence of any dissemination of the disease through the agency of milk.

Typhoid fever and shell-fish.

Special attention has been paid in this City in recent years to the connection between the consumption of shell-fish and certain cases of typhoid fever, and the subject has been discussed in recent annual reports and a special report. It will be noticed that 18 of the 95 cases of this year give a history of the eating of shell-fish.

In Manchester the sanitary authorities have arrived at the same conclusion with regard to the danger from the consumption of shell-fish from polluted sources, and in consequence of communications between the two cities, the following communication was sent to the Local Government Board a few days after the end of the year :—

"The Council House, Birmingham,
"Town Clerk's Office,
"17*th January*, 1910.

"Sir,

"SHELL-FISH FROM POLLUTED SOURCES.

"The Health Committees of the Cities of Manchester and Birmingham have desired us to draw the attention of the Local Government Board to the urgent necessity for

dealing effectively with the danger which at present exists in the sale of shell-fish from known contaminated areas of the foreshore round the coasts of the United Kingdom. Typhoid fever and shell-fish—(*continued*).

"It has been brought to their notice within recent years that a considerable number of persons contract typhoid fever from consuming such shell-fish, and that a certain number of deaths occur annually from the same cause. Among the poorer classes mussels are mainly responsible for this infection.

" In Manchester, in the fourth quarter of 1908, twenty-four per cent. of all the cases of typhoid fever which occurred were associated with the consumption of shell-fish, mainly mussels. In Birmingham, in the same quarter, twenty-five per cent. of all the cases of this disease reported had a similar history of shell-fish having been consumed by the patients during the few weeks prior to the onset of the illness.

" It may be pointed out that sanitary authorities are unable with their present powers to properly deal with this dangerous source of infection.

" They have, moreover, no power to prohibit the sale of shell-fish in general, nor perhaps is it desirable that they should possess such power.

" With regard to the powers of inspection and seizure which they do possess, it is found in practice that these are ineffective for various reasons.

" The most careful inspection cannot be relied upon, without bacteriological examination, to distinguish shell-fish which are dangerous from those which are not. Any local action also has the disadvantage that it results in seriously damaging what is a perfectly legitimate trade, and such action has the further disadvantage that it diverts the polluted shell-fish into other districts.

" The question has been already before the Royal Commission on Sewage Disposal, whose fourth report, issued in 1904, recommends ' that the only way in which this evil can be effectively dealt with is by placing tidal waters under the jurisdiction of some competent authority and conferring on that authority power to prevent the taking of shell-fish for human consumption from any position in which they are liable to risk of dangerous contamination.' (Par. 39, page XXI.)

" It is thought that the only satisfactory procedure would be for the Local Government Board to take the matter up, with a view to dealing with it at its source.

" We are aware that the attention of the Board has been directed to contaminated shell-fish for a considerable

Typhoid fever and shell-fish—(*continued*).

number of years, and that so long ago as 1896 the Medical Officer to the Board issued a report dealing largely with this question.

"It will be recollected by the Board that the attention of the Health Committee of the City of Birmingham was directed to this subject during the year 1908, and that a letter was sent, addressed to the Secretary of the Board, on December 31st, 1908, a copy of which is attached.

"In the case of Birmingham during the present shell-fish season dealers have been asked to surrender at considerable loss shell-fish which have come from certain known doubtful sources.

"As representing the Sanitary Authorities in Manchester and Birmingham, we desire to urge on the Board the necessity for some immediate action, particularly as there appears to be no important obstacle in the way of introducing the necessary reform.

"We are, Sir,

"Your obedient servants,

"(Signed) WM. HENRY TALBOT,
"*Town Clerk of Manchester.*

"(Signed) E. V. HILEY,
"*Town Clerk of Birmingham.*

"The Secretary,
"Local Government Board,
"Whitehall, S.W."

Corrected diagnosis in typhoid fever.

Of the 95 cases of typhoid fever 37 were treated in the City Hospital. In addition to these 9 cases admitted as typhoid fever proved not to be suffering from this disease. These nine patients were suffering from intestinal catarrh, gastric catarrh, gastro-enteritis, constipation, phthisis pulmonalis, tuberculous pneumonia, pneumonia and pleurisy, cerebral abscess, and scarlet fever respectively.

Mortality from typhoid fever in City Hospital.

The percentage mortality among the cases treated in the City Hospital was 19, while among those treated in their own homes or in some other institution it was 28.

Widal's test for typhoid fever.

In 72 instances the Widal test for typhoid fever was carried out at the University of Birmingham in connection with cases in which there was a suspicion of typhoid fever. This is done at the expense of the Health Department on the request of the medical practitioners in charge of the cases.

Of these 72 tests, 21 gave a positive result, 47 negative, and 4 doubtful.

It is greatly to be regretted that the facilities offered by the City in this respect are not more universally adopted by the medical profession in the City.

DIARRHŒA AND ENTERITIS.

Diarrhœa.

The year 1909 was a relatively favourable one so far as mortality from diarrhœa and enteritis was concerned. There were 244 deaths registered as due to diarrhœa, as compared with 470 in 1908, and 173 deaths from enteritis, as against 210 in the previous year. If we group these two causes of death together there were 417 deaths due to diarrhœa and enteritis, as compared with 680 in the previous year.

The death rate per 1,000 of the population from the two diseases was ·74, against 1·20 in the previous year.

Diarrhœa in great towns.

In the following tabular statement will be found the mortality from diarrhœa in a number of the large towns in England, and the rate in the 76 great towns as a whole:

DIARRHŒA ONLY.

	Average 5 years 1904-1908.	1909.	Percentage below average.
76 Great Towns	0·85	0·38	–55
London	0·71	0·33	–54
West Ham...	1·44	0·65	–55
Bristol	0·41	0·27	–34
Burton-on-Trent	0·32	0·17	–47
Wolverhampton	1·04	0·29	–72
Walsall	1·22	0·76	–38
Handsworth	0·39	0·24	–38
West Bromwich	0·83	0·48	–42
Birmingham	1·08	0·45	–58
King's Norton	0·21	0·07	–67
Smethwick	0·61	0·56	– 8
Aston Manor	1·19	0·42	–65
Coventry	0·83	0·25	–70
Leicester	0·84	0·43	–49
Liverpool	1·45	0·70	–52
Manchester	1·09	0·43	–61
Burnley	1·53	0·58	–62
Preston	1·24	0·33	–73
Leeds	0.76	0·23	–70
Sheffield	1.29	0·55	–57
Newcastle	0.54	0·20	–63
Cardiff	0.56	0·32	–43

It will be seen that in Birmingham the rate was 58 per cent. below that in the preceding five years. This is slightly better than the average decline which has taken

Diarrhœa in great towns—(*continued*).

place in the 76 great towns, *i.e.*, 55 per cent. In every one of the towns mentioned the reduction probably took place as a result of the favourable climatic conditions during the year assisted by the strong efforts which are everywhere being put forward to prevent this cause of mortality among young infants.

Diarrhœa at ages.

The age at death and the quarter of the year at which the deaths occurred are shown below :—

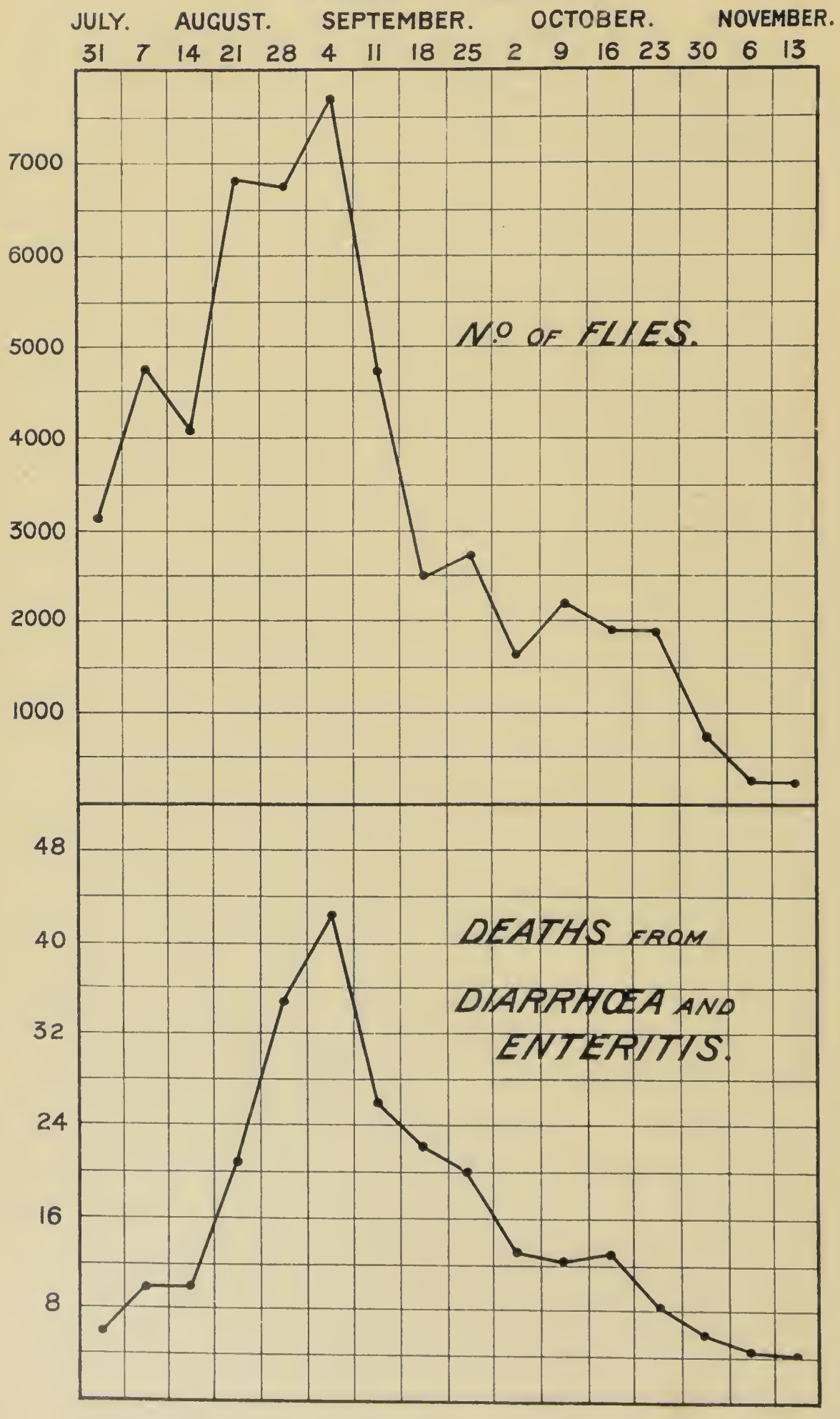
DEATHS FROM DIARRHŒA AND ENTERITIS.

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.
Under 1 month	1	3	11	1	16
Between 1 and 2 months	6	4	18	5	33
,, 2 and 3 ,,	4	3	25	7	39
,, 3 and 4 ,,	7	5	11	8	31
,, 4 and 5 ,,	9	3	20	8	40
,, 5 and 6 ,,	6	4	17	8	35
,, 6 and 7 ,,	2	1	16	1	20
,, 7 and 8 ,,	1	1	16	4	22
,, 8 and 9 ,,	1	1	4	3	9
,, 9 and 10 ,,	1	1	14	3	19
,, 10 and 11 ,,	3	1	7	1	12
,, 11 and 12 ,,	0	0	3	3	6
Total under 1 year... ...	41	27	162	52	282
Between 1 and 2 years ...	7	7	28	14	56
,, 2 and 3 ,, ...	0	6	11	2	19
,, 3 and 4 ,, ...	0	1	3	0	4
,, 4 and 5 ,, ...	2	1	2	1	6
Total under 5 years ...	50	42	206	69	367
Between 5 and 10 years ...	0	1	0	2	3
,, 10 and 15 ,, ...	1	1	0	0	2
,, 15 and 20 ,, ...	0	0	0	0	0
,, 20 and 25 ,, ...	0	0	0	0	0
,, 25 and 35 ,, ...	0	0	0	1	1
,, 35 and 45 ,, ...	0	0	1	0	1
,, 45 and 55 ,, ...	5	0	4	2	11
,, 55 and 65 ,, ...	4	2	1	4	11
,, 65 and 75 ,, ...	2	2	5	5	14
,, 75 and 85 ,, ...	2	1	1	2	6
At 85 years and upwards	0	1	0	0	1
All ages	64	50	218	85	417

CHART Nº 4.

1909

WEEKS ENDING



The relationship beween diarrhœa and certain climatic conditions is indicated in the following figures :— Diarrhœa and temperature and rainfall.

	Deaths during each year.				During 3rd Quarter.			
	Diarrhœa.	Enteritis.	Total.	Death rate per 1,000.	Mean Temperature.	Mean Temperature of Soil 4ft. deep.	Rainfall in inches.	Days with ·010 or more of rain.
1887	550	60	610	1·46	58·9	—	5·62	31
1888	305	60	365	0·87	55·7	—	9·58	49
1889	465	56	521	1·23	57·6	—	6·62	39
*1890	434	101	535	1·23	58·0	—	7·39	42
1891	320	107	427	0·99	57·3	—	7·27	48
†1892	443	104	547	1·13	57·0	—	9·22	41
1893	828	200	1028	2·11	60·0	—	5·61	46
1894	256	148	404	0·82	54·9	—	7·18	45
1895	605	282	887	1·79	59·6	—	6·45	44
*1896	589	309	898	1·76	57·7	54·6	7·33	47
1897	923	521	1444	2·86	58·3	53·5	7·24	35
1898	668	544	1212	2·37	58·7	54·3	4·50	21
1899	831	580	1411	2·74	61·2	55·9	4·98	34
1900	613	409	1022	1·97	60·2	54·4	5·43	31
1901	792	206	998	1·91	60·7	54·8	5·91	26
*1902	412	122	534	0·99	57·1	52·8	7·51	47
1903	588	136	724	1·36	57·4	52·0	9·85	49
1904	955	155	1110	2·07	58·8	54·1	5·75	31
1905	463	177	640	1·19	58·4	54·1	7·33	34
1906	857	226	1083	1·98	60·9	54·0	2·97	26
1907	237	168	405	0·73	57·5	52·2	6·08	40
*1908	470	210	680	1·20	57·9	52·9	6·94	41
1909	244	173	417	0·74	57·6	52·3	7·63	47

* 53 weeks. † Enlarged City.

Generally, it may be said that the summer was a favourable one so far as the prevention of this disease is concerned. The warmer weather which occurred at the beginning of August was soon followed by a cold and wet period.

A considerable number of observations were made during the year, as to the prevalence of flies in dwelling houses, and while the information obtained in Birmingham is not sufficiently extensive yet to enable reliable deductions to be drawn, the diagram opposite gives an indication of close relationship between the prevalence of flies and the incidence of epidemic diarrhœa, the suggestion being that flies, breeding as they do in filth and living on decomposing garbage of all kinds, act as carriers of germs, which when they get into food set up the illness known as epidemic summer diarrhœa. In the diagram in question no allowance has been made for an incubation period in the case of the child suffering from summer diarrhoea. Where such Diarrhœa and flies.

Diarrhœa and flies (*continued*).

an allowance is made the curve showing the prevalence of flies usually corresponds more closely with the diarrhœa curve than the one set out.

The following is a copy of a report made to the Health Committee on the observations on the prevalence of flies during the year. The tables mentioned relating to individual counts and to meteorological conditions have been omitted :—

"In July last, a request was received from the Local Government Board that Local Authorities should assist in deciding certain points having a bearing on the subject of the spread of disease by flies. For a number of years it had been noted that the incidence of summer diarrhœa closely corresponded with the prevalence of flies, and whenever a curve showing the number of flies found daily had been made and compared with a similar curve giving the number of cases of sickness from summer diarrhœa, it was noticed that the two curves corresponded somewhat closely.

"It has been suggested that flies feed on, or are attracted by, certain decomposing matters containing germs, and that they subsequently visit dwelling houses and spread these germs into milk and other food substances. For instance, it has been known for many years that large numbers of flies are bred in privy middens, and that, whether bred in such places or not, they visit them, and, therefore, the assumption has been put forward that the curves of incidence of disease and of flies have a close relationship to one another.

"But while these curves are so like one another it has been found that there are differences, and these differences have indicated that the relationship between the two sets of curves may both be due to one cause, viz., summer heat. It is therefore, highly important that such a question should be thoroughly investigated.

"The life histories of the different flies which are to be found in towns is being worked out by entomologists and others, and no attempt has been made to deal with this part of the enquiry. It may, however, be broadly stated that there are a number of varieties of flies prevalent in a town. Of the flies actually caught in Birmingham for identification purposes there were :—

Common house fly	22,360	or 91%
Lesser house fly	1,154	„ 4·7%
Bluebottle fly	840	„ 3·4%
Special fly	190	„ ·9%
Green bottle fly	12	
Bright blue fly	8	
Stomoxys calcitrans fly ...	3	
Others	5	

Diarrhœa and flies—(*continued*).

"It is therefore obvious that the most numerous is the common house fly. The life history of this insect has been studied by Mr. Jepson, of Cambridge. It is found that the egg hatches in from eight to twenty-four hours after being laid, and that the most fertile breeding grounds or places of incubation are large accumulations of horse manure or house refuse. After hatching there is a larval stage which may be as short as four or five days, during which the lava feeds on the refuse in which the egg has been laid. It needs a warm temperature and moisture and a good food supply. Having grown to its full size it becomes a pupa, and under favourable conditions from three to five days elapse before the pupa becomes a fly. The fly then emerges, and may live from six weeks to four months. The winter is passed in this stage.

"All experience goes to prove that dwelling houses situated near refuse heaps, and particularly those situated near large accumulations of stable manure, are infested with house flies to a very great extent.

"The observations in Birmingham were, as the result of the request for information not being received until July, commenced rather too late, the first being made on the 26th of that month. Four sites were selected as being likely to show the incidence of flies in houses near where accumulations of decomposing matter were found.

"Site A was the City Meat Market, Bradford Street, and four houses near were selected as observation stations. No. 1 observation station was a barber's shop, situated immediately on the opposite side of the road from the Meat Market, 60 feet away from the nearest part of the market, and approximately 300 feet away from the lairages and store for refuse. The flies were caught in this, as in other places, on a fly paper for enumeration purposes, and in a fly trap for identification purposes. The shop is situated on the north side of the Meat Market.

"No. 2 observation station was a caretaker's house 490 feet away from the nearest part of the Meat Market, and 550 feet away from the refuse heap. Here the fly papers were hung on the kitchen wall. The house is situated on the south-east side of the Market.

"No. 3 observation station was a shop situated to the north-east of the Market, and 140 feet distant from the nearest portion of it, the distance from the refuse heap being 340 feet.

"No. 4 observation station was a house situated in a court-yard, the yard being almost directly opposite the Market gate, but flies coming from the Meat Market would have to pass over the top of the building to enter this house. The house is on the west side of the Market, 80 feet distant, and 200 feet away from the manure heap.

Diarrhœa and flies—(*continued*).

"Site B was a Corporation wharf where refuse from the City is taken and burnt. A large part of the refuse at this wharf is from the Markets.

"No. 1 observation station was a small back-to-back house situated almost due west from the wharf, with its front door away from the wharf, the distance being 350 feet. The observations were made in the kitchen.

"No. 2 observation station was a house with both front and back doors situated south-west from the wharf and 320 feet away. The observations were taken in the living room, which is situated near the back door and therefore facing towards the wharf.

"No. 3 observation station was a public house with front and back entrances, situated close to an arm of the canal, and about 270 feet distant from the wharf in a southerly direction. The observations were made in the serving room at the front of the house, the entrance to this room being on the side of the house away from the wharf.

"No. 4 observation station was a house having front and back entrances, also situated near an arm of the canal, The observations were taken in the kitchen, which faces in the direction of the wharf, the distance between the house and the wharf being 320 feet in an easterly direction.

"Site C was a large manure receptacle containing the refuse from a number of horses, a considerable number of which were entire. The manure heap at one time was a source of great nuisance in the neighbourhood on account of the penetrating smell which it emitted. At the time of the experiments it was covered over, and the contents were removed once or twice a week, but there was obviously enough manure left to enable the breeding of flies to take place. Efforts, however, were made to keep it as clean as possible.

"No. 1 observation station was a house, the kitchen being on that side of the house away from the fly centre. This house is 280 feet away from the manure heap in a south-westerly direction, and there are a number of buildings intervening.

"No. 2 observation station is a house with through ventilation situated 180 feet away to the south-west, the observations being taken in the kitchen, which to some extent faces the manure pit.

"No. 3 observation station is a house situated 60 feet distant from the manure heap in a westerly direction, the observations being made in the kitchen.

"No. 4 observation station was a back house without through ventilation in a courtyard, the entrance to the house being away from the manure heap. The distance between the house and the manure pit was 170 feet in a north-easterly direction.

"No. 5 observation station was a house with through ventilation 220 feet away to the north-east.

"Site D was a fell-monger's premises, where there was a considerable amount of organic matter, some of which was in a decomposing condition.

"No. 1 observation station was a back-to-back house 30 feet away from the premises in a westerly direction. The observations were made in the kitchen and living-room, the door of which faced the fell-monger's premises.

"No. 2 observation station was a dwelling house in a street, and 130 feet away from the premises to the north-west. The observations were made in a room on the side of the house facing the premises.

"No. 3 observation station was a house in a broad street, and 140 feet distant in a south-easterly direction, with very few dwelling houses or other obstructions intervening. The observations were taken in the living room, which faces towards the fell-mongers' premises.

"No. 4 observation station was a house in the same direction as No. 3, but 130 feet further away. The enumeration was made in the kitchen. The distance between this house and the fell-mongers' premises is 270 feet.

"The results of the counts, the dates, and other particulars are given in the tables.

"On chart No. 4 is shown the total number of flies caught, and the deaths from summer diarrhœa.

"The details for each of the observation stations are given in the tables herewith submitted.

"In ascertaining the varieties of flies fly traps were used, the flies were then chloroformed and each was examined. As is to be expected, the number of the lesser house fly, and particularly of the blue bottle fly appear to vary very much in the different localities. The method adopted in counting the flies was an accurate one, but whether flies caught on a fly-paper give a reliable indication of the actual numbers is open to some doubt. It is probable that a good many circumstances come into operation. In

Diarrhœa and flies—(*continued*).

many of the instances there were intervening structures between the supposed source of the flies and the house of observation, such as dwelling houses, workshops, etc. These probably played a considerable part in diverting flies from a particular house and in causing the irregular distribution.

"Again, on some days the houses were shut up for a much longer period than others, thus preventing the flies gaining access. During very warm weather the windows and doors were kept open, and this would allow a large number of flies to enter. Food appeared to attract flies, and at week ends a larger quantity of food was left about than at other times. There appeared to be more flies going into the houses on a wet day following a warm period, apparently to protect themselves from the rain.

"So far as the small number of observations in Birmingham are concerned, it would be unwise to suggest any deductions; the figures are only put forward as preliminary.

"A table is added showing for each day the maximum and minimum temperature, the soil temperature, the rain fall, the direction of the wind, and the force of the wind."

Diarrhœa and feeding of infants.

In the following table are set out the methods of feeding infants under six months old who died from diarrhœa during the third quarter of 1909. It will be seen that the figures closely correspond with those in former years, and emphasise in an important manner the necessity for teaching working class mothers the need of breast-feeding their infants during the early months of life.

The table also shows the general results which were ascertained in the preceding five years. During the six years there were 1,262 infants under six months of age who died of Summer-diarrhœa, i.e., at ages when breast-milk alone is the proper food for the infants. Of this number 10 per cent. of the deaths occurred among infants wholly breast-fed and 90 per cent. among those fed in other ways. All of the deaths from this disease occur in the poorest class districts, and among this group of mothers at least 75 per cent. of the babies are fed on breast-milk alone till they are six months of age. Taking the six years in question it may be safely asserted that babies fed otherwise than at the breast die from diarrhœa at 27 times the rate that breast-fed babies die. On a former occasion with more definite statistics for a two-year period it was found that such babies died at 30 times the rate. Among these mothers anything which encourages breast-feeding must largely help to reduce diarrhœa mortality.

Methods of Feeding the Infants under Six Months old who died of Diarrhœa during the Third Quarter.

AGE.	Number of Deaths.	Breast Alone.	Breast with Spoon Food.	Breast with Bottle.	Bottle with Cow's Milk Alone.	Bottle with Cow's Milk and other Foods.	Bottle with Condensed Milk only.	Bottle with Condensed Milk and other Food.	Other Foods from Bottle or with Spoon.	Boat Bottle used.	Tube Bottle used.
Under 1 month	8	5	...	1	1	...	...	1	...	1	1
1 and under 2 months ...	18	4	2	2	9	1	...	...	...	11	3
2 ,, 3 ,, ...	22	4	3	...	10	...	3	1	1	8	6
Total under 3 months ...	48	13	5	3	20	1	3	2	1	20	10
3 and under 4 months ...	11	1	3	...	3	1	2	...	1	1	6
4 ,, 5 ,, ...	21	1	2	2	7	2	4	3	...	6	10
5 ,, 6 ,, ...	13	1	1	3	5	1	1	...	1	6	5
Total 3 to 6 months ...	45	3	6	5	15	4	7	3	2	13	21
Total under 6 months, 1909	93	16	11	8	35	5	10	5	3	33	31
,, ,, ,, 1908	188	30	22	11	86	13	16	5	5	53	84
,, ,, ,, 1907	68	2	8	7	29	14	4	1	3	27	32
,, ,, ,, 1906	327	26	20	42	143	29	32	23	12	78	198
,, ,, ,, 1905	178	16	17	11	82	25	17	8	2	59	84
,, ,, ,, 1904	408	37	14	50	194	67	25	12	9	71	279

INFLUENZA.

Influenza

The following table shows the deaths from influenza during each of the past nineteen years :—

1891	...	244	1901	...	90
1892	...	88	1902	...	76*
1893	...	123	1903	...	63
1894	...	29	1904	...	68
1895	...	121	1905	...	63
1896	...	41*	1906	...	72
1897	...	59	1907	...	81
1898	...	89	1908	...	158*
1899	...	150	1909	...	90
1900	...	185			

* 53 weeks.

ERYSIPELAS.

Erysipelas

The number of cases of erysipelas and of deaths from this disease are set out below, together with the mortality rate :—

	Cases.	Deaths.	Percentage Mortality.
1899	629	21	3·3
1900	678	26	3·8
1901	726	23	3·2
1902	762*	30*	3·9
1903	644	22	3·4
1904	597	29	4·9
1905	595	31	5·2
1906	589	23	3·9
1907	599	18	3·0
1908	476*	10*	2·1
1909	507	25	4·9

* 53 weeks.

As will be noted the mortality rate was a high one.

PUERPERAL FEVER.

Puerperal fever

Certain statistics in regard to puerperal fever are given below, showing that the number of cases and the mortality during 1909 were relatively low.

	Cases.	Deaths.
1899	30 ...	14
1900	39 ...	26
1901	32 ...	28
1902	35 ...	22
1903	31 ...	21
1904	36 ...	27
1905	40 ...	24
1906	28 ...	19
1907	47 ...	29
1908	17* ...	8*
1909	26 ...	15

* 53 weeks.

Puerperal fever (*continued*).

The deaths were in the proportion of one in every 999 births. Similar figures for former years are also given in the table :—

	Proportion of Deaths to Total Births.
1899	1258
1900	652
1901	598
1902	777
1903	803
1904	626
1905	658
1906	843
1907	539
1908	2018
1909	999

ACCIDENTS OF CHILD BIRTH.

Child birth.

Twenty-five mothers died from accidents of child-birth, as compared with 43 in the previous year and 27 in 1907. The mortality was at the rate of one mother in every 599 births. This is better than in the previous year, when one mother died in every 375 births from one or other of the so-called accidents of child-birth.

MIDWIVES ACT, 1902.

Midwives Act.

To supervise the conduct of the midwives in the City, one lady visitor, who is herself a certificated midwife, devotes the whole of her time. The work of this midwife visitor mainly consists of seeing that the midwives carry out the requirements of the Midwives Act, 1902, and of the rules made by the Central Midwives Board, for regulating the practice of midwives.

By reason of the operation of the Notification of Births Act the addresses of the houses where babies are born are known in about 90 per cent. of cases within 36 hours. In the remaining ten per cent. the addresses are ascertained from the Registrar's returns in about six weeks' time after the birth.

Every year about 10,000 births out of the 14,000 or 15,000 births occurring in Birmingham are visited by one of the large staff of health visitors, who in each case reports to the midwife visitor the name of the midwife in attendance. From this source, and also from the midwives themselves, as well as from medical men, almost complete information is available as to the confinements attended by particular midwives, and it is possible in this way to direct special attention to those midwives who are more or less incompetent and careless.

Midwives Act—(*continued*).

As has been pointed out in former reports, Birmingham has a large number of midwives who have never received any good training. Of the 194 midwives in practice on December 31st, 1909, no less than 177 were admitted to the roll by reason of their having been in *bona-fide* practice as midwives on the coming into operation of the Midwives Act.

For these *bona-fide* midwives classes and lectures have been arranged each year since the Act came into operation, with a result that the majority of these women are now well informed and experienced midwives. There are a certain number of others who by reason of age, illiteracy, or defective sight are inefficient, and incapable of being made efficient.

There still remains a third group of women who continue to practise, and who have never taken any trouble to qualify themselves. The majority of these are dirty, careless, and ignorant, but not sufficiently so to enable the Health Committee to bring a charge against them which could be substantiated in Court. Fortunately, this class is a rapidly dwindling one, and already a good many have had their names removed from the Roll of Midwives.

Number of Midwives.

The number of midwives on the register in Birmingham on December 31st, 1909, other than those in hospitals, approved by the Central Midwives' Board, and in Workhouse Infirmaries, was 194, as compared with 200 on the same date in 1908, 221 in 1907, 219 in 1906, and 210 in 1905. Twenty-eight midwives have given up practice in Birmingham during 1909 for the following reasons :—

Removed out of district	2
Given up through ill-health	2
Died	4
Gone to other work	2
Removed from Midwives' Roll	1
Temporarily employed here...	17

The registered midwives attended 9,238 births in 1909, as compared with 9,244 in 1908.

The number of incompetent women who undertake a few labours only is diminishing. There are still in Birmingham far too many midwives, so that for the benefit of their profession the number of registered women may safely be allowed to diminish.

The number of cases per midwife was as follows :— Number of Midwives—(*continued*).

No. of Cases attended.	Number of Midwives. 1906.	1907.	1908.	1909.
Less than 50 births ...	125	119	96	71
Between 50 and 100 births	39	46	42	45
,, 100 and 150 ,,	17	14	14	12
,, 150 and 200 ,,	2	4	6	5
Over 200 births	8	7	8	9
Midwives residing out of City	?	?	?	44
Monthly Nursing only ...	?	?	?	8
Total midwives on roll ...	219	221	200	194

From the above it will be seen that the majority of the midwives in Birmingham do not make a living wage. Probably it is safe to say that at least one-half of them engage in midwifery to supplement the family income. As pointed out in last year's report, 50 midwives could easily undertake all the work now done by nearly 200 women, so that it may be said with regard to Birmingham the Midwives Act has not brought about any shortage which would be an inconvenience to the poor women of the City.

Generally the work done by the midwives has been satisfactory so far as can be judged from visits paid by the midwife visitor. It is only right, however, to guard such a statement by saying that unskilled treatment is often only ascertained at intervals of weeks or months after the labour. Such unsatisfactory midwifery is not confined to the practice of midwives alone.

Midwives and medical help.

The midwives report to the Health Department on each occasion when a medical man is called in. There were 540 such reports received during the year, as compared with 343 in 1908. The causes for sending for medical help were as follows :—

Delayed or difficult labour ...	155	Abdominal pain, etc. ...	4
Hemorrhage	40	Deformity of child ...	9
Abnormal presentation ...	59	Growth on child's head ...	1
Adherent or retained placenta	34	Breech presentation ...	12
Lacerated perineum ...	43	Convulsions	7
High temperature	32	Excessive sickness	2
Exhaustion	3	Eclampsia	3
Contracted pelvis	7	Jaundice	1
Ophthalmia	17	Insanity	1
Debility of child	18	Cleft palate	5
Stillbirth	4	Pemphigus neonatorum ...	1
Abortion	13	Inflammation of utorus ...	2
Twins	6	Infantile diarrhœa ...	1
Bronchitis	8	Paralysis	1
Premature birth	24	Kidney disease	2
Influenza	1	Dropsy	2
Debility of mother ...	10	Prolapse of uterus ...	1
Spina bifida	4	Thrombosis	3
Heart failure	1	Inflamed breast	3

Midwives and medical help—(*continued*).

Of the 150 midwives who reside in Birmingham 127 keep records of the temperatures of their patients in the booklets supplied to them. Of the remaining 23 midwives most of them do not take temperatures on account of defective eyesight or inability to understand the reading of a thermometer or to record temperatures.

Neglect of rules by midwives.

During the year four midwives were summoned to appear before the Health Committee, the charges against them being as follows :—

March 23rd, 1909, *Midwife No.* 12,500.—Charged with not advising medical assistance in a case of ophthalmia.

Reprimanded and cautioned by the Health Committee.

July 28th, 1909, *Midwife No.* 6,612.—Charged with not advising that medical help be sent for in a case of obvious illness until too late to save the patient's life, and with not entering the case in her register.

It was decided to report this midwife to the Central Midwives' Board, and later she was reprimanded and cautioned by the Board.

October 12th, 1909, *Midwife No.* 12,500.—Charged with not advising medical assistance in case of ophthalmia, and not entering same in register.

The Health Committee decided, as this was the second time during the year that this midwife had appeared before them charged with the same offence, to report her conduct to the Central Midwives' Board. She appeared before them, their decision being deferred for three months, the Local Supervising Authority to report on her conduct in the meantime.

October 12th, 1909, *Midwife No.* 6,902.—Charged with not keeping a register of cases, with not wearing a dress of washable material, with not having the necessary apparatus, not taking the necessary antiseptic precautions during a case of labour, and various other breaches of the rules.

The Health Committee decided to report this midwife to the Central Midwives' Board, and later her name was removed from the roll and her certificate cancelled.

For other minor irregularities printed notices were served on the following midwives :—

January 26th, 1909, *Midwife No.* 12,500.—Charged with not notifying a case of stillbirth, and with not wearing a suitable dress.

March 29th, 1909, *Midwife No.* 4,827.—Charged with not notifying a case of stillbirth. Neglect of rules by midwives—(*continued*).

April 26th, 1909, *Midwife No.* 14,112.—Charged with not notifying that she had advised medical assistance, and with not having the necessary apparatus.

May 10th, 1909, *Midwife No.* 373.—Charged with not notifying that she had advised medical assistance, and with having dirty apparatus.

June 9th, 1909. *Midwife No.* 24,321.—Charged with not notifying that she had advised medical assistance.

September 6th, 1909, *Midwife No.* 16,404.—Charged with not notifying a case of stillbirth.

October 6th, 1909, *Midwife No.* 4925.—Charged with not advising that medical assistance should be sought in case of obvious illness.

November 25th, 1909, *Midwife No.* 13,136.—Charged with not notifying having advised medical assistance, and for making an incorrect entry in her register.

Twenty midwives were suspended during the year for the following causes :— Midwives suspended.

(*a*) For impetigo contagiosa. (Two midwives suspended).

(*b*) For puerperal fever. (Fifteen midwives suspended.)

(*c*) For other infections. (Three midwives suspended, two on account of scarlet fever, and one on account of erysipelas.)

Two outbreaks of impetigo contagiosa, usually called pemphigus neonatorum, were ascertained during the year. In the first instance a midwife, who is a capable, clean woman, attended between May 28th and September 28th, 69 cases of labour. In these cases no less than 37 of the infants were attacked with impetigo contagiosa either during the period of the midwife's attendance or shortly after her leaving. The dates of the infants' attacks were as follows :—

June 8th
,, 18th
,, 24th
July 11th
,, 12th
,, 19th (two cases)
,, 20th
,, 21st
,, 23rd
,, 26th
,, 30th
,, 31st
Aug. 10th
,, 17th
,, 20th
Aug. 23rd (died)
,, 27th
,, 30th (two cases)
,, 31st
Sept. 1st
,, 2nd
,, 4th (two cases)
,, 6th (two cases, one died)
,, 10th
,, 11th
,, 12th (two cases)
,, 13t5 (two cases)
,, 17th
,, 26th
,, 28th

Midwives suspended (*contined*).

There were two deaths among the infants affected, that of the one born on August 23rd being certified by the medical attendant as due to congenital syphilis, while that of the infant born on September 6th was put down to cellulitis of abdominal wall and convulsions. In a large number of cases medical men were called in on account of the severity of the illness, but apparently the midwife was not associated with the outbreak until the people in the neighbourhood of her practice realised that nearly every case she attended developed the disease, some of them very severely.

The midwife, as already stated, was generally regarded as a clean midwife. On September 29th she was suspended from practice, her clothing was thoroughly disinfected, she was advised to have daily baths and to wash her hair, and she was required to provide herself with clean aprons, one to be left at each house where she attended a confinement. She resumed her practice on October 7th. Two further cases occurred on October 29th and November 23rd respectively, both of them slight and possibly deriving their infection from other sources.

With regard to the first batch of cases it was found that the midwife in question made a daily round to wash the babies in her practice, and that generally she carried with her an apron which she used first at one house and afterwards at others. It is highly probable that the apron was the cause of the spread of the infection from one to another.

At a later date, December 25th and 26th, two cases occurred in the practice of another midwife in the same neighbourhood, with one death. Prompt measures were taken on similar lines to the above, and apparently no further cases occurred.

The midwives reported the deaths of 22 infants before the arrival of medical assistance. In two instances they reported the sudden deaths of mothers before medical aid could be procured.

The scheme adopted in the parish of Birmingham of allowing a midwife to send for the nearest available medical man when the patient has no doctor of her own has worked exceedingly well. With the very poor it has been the means of enabling prompt medical assistance to be obtained, for the doctor is assured of his fee from the Board of Guardians. In 58 cases the midwives had to avail themselves of the arrangement made for calling in a doctor to be paid by the Guardians, 33 being in the parish of Birmingham, and 25 in other parishes.

STILLBIRTHS.

Stillbirths.

Two hundred and sixty-two stillbirths were reported by midwives, as compared with 248 during 1908.

The condition of the infant was enquired into in each case, and was found to be as follows :— Stillbirths—(*continued*).

Condition of Child and Presentation.	Total still-births.	Period of Gestation.				
		Full time.	8 months.	7 months.	6 months.	Under 6 months.
Macerated	87	22	26	21	13	5
Not macerated ...	175	100	22	16	26	11
Vertex	164	76	36	21	23	8
Breech	45	22	7	9	5	2
Footling	23	10	4	3	4	2
Transverse	1	—	—	1	—	—
No information ...	29	12	3	3	6	5

TUBERCULOSIS.

During the past four years the mortality from tuberculosis, in all its forms, has been relatively low, the rate of mortality from all forms being 1·63 per 1,000 in 1909, against 1·67, 1·67, and 1·62 respectively in the three previous years. The rate from phthisis alone was 1·34 per 1,000. The number of deaths from this disease, and the total death-rate, are shown in the following table for a number of years :— Tubercular diseases.

DISEASE.	1898	1899	1900	1901	*1902	1903	1904	1905	1906	1907	*1908	1909
Abdominal Tuberculosis	64	78	104	131	92	113	107	94	68	77	53	48
Tubercular Meningitis	102	63	56	88	63	73	73	68	75	73	72	51
Phthisis	718	841	847	903	874	754	806	759	672	675	741	751
Other forms of Tuberculosis	70	96	71	83	64	85	85	78	69	97	87	64
Total deaths	954	1078	1078	1205	1093	1025	1071	999	884	922	953	914
Mortality rate	1·87	2·10	2·08	2·30	2·04	1·93	2·00	1·84	1·62	1·67	1·67	1·63

*53 weeks.

In view of the large number of schemes which have been instituted within the past few years for the prevention of this disease, it is gratifying to be able to say that in no previous period has the mortality for four years been as low as during the past four years. In 1909 tuberculosis in its various forms was responsible for 10 per cent. of the total mortality in Birmingham, while in the previous year it was responsible for 11 per cent. As will be seen above, the largest cause of death is tuberculosis of the lung. It

Tubercular diseases—(*continued*).

will also be noted that the reduction in the mortality is largely due to a reduction in cases of abdominal tuberculosis and tubercular meningitis—forms of the disease which affect children.

Phthisis in males and females.

The following figures show that, as in former years, so in 1909, the mortality from pulmonary phthisis amongst males was considerably higher than among females:—

DEATH-RATE FROM PHTHISIS.

	Males.	Females.
1904	2·00 ...	1·03
1905	1·94 ...	0·89
1906	1·66 ...	0·82
1907	1·67 ...	0·80
1908	1·85 ...	0·79
1909	1·73 ...	0·96

If wage-earning ages only are taken, *i.e.*, 15 to 55 years, the mortality among males during 1909 was 2·39, while among females it was 1·34. During the three years ending 1909 the average mortality among males of wage-earning ages has been more than twice as great as that amongst females.

Tuberculosis at various ages.

The number of deaths and mortality-rate at each age group from the four chief varieties of tubercular disease are as follows:—

	Abdominal Tuberculosis.		Tubercular Meningitis.		Phthisis.		Other forms of Tuberculosis.	
Ages.	Deaths.	Rate per 1,000	Deaths.	Rate per 1,000	Deaths.	Rate per 1,000	Deaths.	Rate per 1,000
0	13	·88	14	·94			10	·67
1	11	·82	13	·96			6	·44
2	5	·37	8	·58	19	·28	2	·15
3	2	·15	6	·46			2	·15
4	2	·16	3	·24			2	·16
5	8	·13	1	·02	12	·20	6	·10
10					10	·18		
15					36	·62		
20					65	1·07		
25					189	1·97		
35	7	·02	6	·01	202	2·97	30	·07
45					118	2·46		
55					82	2·79		
65					16	1·11		
75					2	·42		

Notification of phthisis.

Voluntary notification of phthisis came into operation in March, 1905, and since then the following number of notifications have been received:—

1905	666
1906	658
1907	751
1908	865
1909	1636

The increase during 1909 is due to the fact that the Public Health (Tuberculosis) Order came into force at the beginning of the year. The Order in question has worked extremely well, although it is somewhat complicated.

Notification of phthisis—(*continued*).

Of the 751 deaths from phthisis during the year, 521 had been notified as cases—equal to about 70 per cent.

During the year under review it was found necessary to add another Inspector for tuberculosis to the staff. There are now one male and one female Inspector, who do nothing else but visit the notified cases of tuberculosis. Much good has been done by these visits in the direction of preventing infection being spread. Similarly 650 houses have been disinfected where a consumptive has either died or removed from, or where, in certain cases of very acute infection, it was thought desirable to disinfect during the stay of the patient in a particular house.

Phthisis and spitting.

During the year under review a special report was made as to the filthy habit of general spitting on streets, particularly in its bearing on the spitting by consumptives. It is thought that if steps were taken to limit spitting on footpaths a great deal of the tubercular spit which is found on footpaths would be prevented. The report will be found appended to this one.

Phthisis and bacteriological examinations

Bacteriological examinations of spit, in order to verify diagnoses, are made for any medical practitioner in Birmingham at the cost of the Corporation by the Pathological Department of the University. The following figures show the work done during 1909 in this respect: —

Total number of sputa examined during year	376	
,, ,, positive results	100	
,, ,, negative results	276	
Positive results—cases notified	61	or 61%
,, ,, ,, not notified	39	or 39%
Negative results—cases notified	30	or 11%
,, ,, ,, not notified ...	246	or 89%

SALTERLEY GRANGE SANATORIUM.

Salterley Grange Sanatorium.

The first patient was admitted to the Sanatorium on January 7th, 1909, and, with the exception of a shortage in the water supply, the institution is now in excellent working order. The shortage in the water supply, however, prevented the institution being worked to its full capacity: indeed, it may be roughly stated that rather less than one-half the beds remained unoccupied during the whole of 1909. By sinking an additional well there is now little doubt that the supply will be more than sufficient for all purposes.

As was anticipated before the Sanatorium was built, there have been a certain number of the patients who, while receiving marked benefit during the treatment, have had to return to such a condition of poverty and insanitation that it is doubtful whether they will receive lasting benefit from the treatment. Particularly has this been the case with several brasscasters—most of them men of

Salterley Grange Sanatorium—(*continued*).

over 35 years of age—who have got excellent characters, but who find it extremely difficult to get any other occupation which will be less injurious than that of brasscasting. They have been advised not to go back to brasscasting, but, unfortunately, the knowledge gained in this trade is not such as can be easily applied in other trades where there is less dust.

Between November 1st, 1908, and December 31st, 1909, Dr. Douglas Stanley examined 317 patients, and passed 76 for treatment at Salterley Grange. Each of these patients was immediately admitted, so that the accommodation, limited as it was by reason of the shortage in the water supply, was more than sufficient for the total number of cases suitable for sanatorium treatment. The number of suitable patients applying for admission is now increasing, however, and during the early months of 1910 it has been possible to keep the Sanatorium continuously full.

The following is a detailed report by the Medical Superintendent, Dr. Mathews, on the treatment of patients and work at the Sanatorium during 1909:—

"Gentlemen,

"I beg to report that the first patients admitted to the Sanatorium entered on January 7th, 1909, since which date 76 patients have been admitted for treatment. The comparative smallness of the number admitted is due to the fact that for the first three quarters of the year shortage of the water supply rendered it inadvisable to keep more than 24 beds occupied. Happily, these difficulties are now a thing of the past, and all 40 beds are available for use.

"Of these patients 48 have been discharged and one re-admitted, the number under treatment at the Sanatorium on January 1st, 1910, being 29.

"Of the 76 patients admitted 40 were males and 36 females, and they are classified according to age, as follows:—

TABLE I.

Ages.	Males.	Females.	Total.
Under 15 years ...	— ...	1 ...	1
15—19 ,, ...	6 ...	7 ...	13
20—24 ,, ...	9 ...	16 ...	25
25—29 ,, ...	10 ...	5 ...	15
30—34 ,, ...	8 ...	4 ...	12
35—39 ,, ...	6 ...	3 ...	9
40 and over ...	1 ...	— ...	1
	40 ...	36 ...	76

From which table it will be seen that 67 per cent. of the male patients were between the ages 20—34, and 66 per cent. of the female patients between the ages 15—24.

"The social status of the patients appears in the following table:—

TABLE II.

Sex.	Married.	Single.
Male	16 ...	24
Female	9 ...	27
Total... ...	25 ...	51

"The occupations of the patients were as detailed below:—

TABLE III.

Males.	Occupation.	Females.
14	Metal trades	8
5	Labourers	—
3	Electricians	—
3	Clerks	1
3	Railway servants	—
2	Tramway servants	—
2	Packers	1
2	Tailors	—
2	Bakers	—
1	Storekeeper	—
1	Bar tender	—
1	Police	—
1	Insurance agent	—
—	Home	11
—	Domestic servants	8
—	Shop assistants	2
—	Dressmakers	2
—	Health visitors	1
—	Typewriter	1
—	Paper bag maker	1
40		36

"The length of time occupied under treatment varied considerably—from six days (in the case of a patient who left on account of home-sickness) to 246 days. Some difficulty was at first encountered in getting the patients to realise the necessity for prolonged treatment. The sense of well-being produced by the open-air life, combined in many cases with domestic anxiety at home, induced some patients to relinquish treatment soon after the novelty of their new surroundings had worn off. This was the subject of a special report in March, wherein it was suggested that this difficulty would soon be overcome. This forecast has been amply justified, and there has not recently been any difficulty in inducing patients to remain under active treatment for at least three months—the minimum time considered necessary to obtain lasting benefit. As a matter of fact, the average length of stay has been longer than this:—

TABLE IV.

	Males.	Females.
Average length of stay of 48 patients discharged ...	118½ days	109 days
Minimum length of stay ...	24 „	6 „
Maximum length of stay ...	236 „	246 „

Salterley Grange Sanatorium—(*continued*)

"Before proceeding to the consideration of the results of the treatment, it may not be out of place to refer somewhat briefly to the lines along which treatment is conducted at the Sanatorium.

"The principles upon which the routine treatment of phthisis in the Sanatorium is founded are three:—

"(*a*) Life in the open air.

"(*b*) An abundant dietary.

"(*c*) Strict regulation of the rest and exercise of the patient according to his physical condition.

"(1) It is not neeessary to dilate on the importance of fresh air, as its value is abundantly proved and widely recognised. The essential point is that the patient should be *constantly* in the open air, and to attain this end the Sanatorium buildings are designed. Each patient occupies a separate room, so that it is possible to arrange the ventilation according to the patient's individual requirements, as well as according to the exigencies of wind and weather. The buildings are so constructed that each room faces S.S.E., S., or S.S.W., on which side is a double door, flanked on each side by a window, and surmounted by a row of fanlights. Doors, windows, and fanlights are all kept open night and day, except when some temporary condition demand their closure. On the north side of the room is a flush panel door, opening into the corridor, which runs along the back of the building, and which is itself entirely open. Above the door is a row of fanlights, similar to those in front. By these means the room is kept constantly supplied with currents of fresh air, and the atmosphere inside the room is equal in purity to that outside. Each room contains a slow-combustion stove, but these are not utilised save under exceptional circumstances.

"While resting during the day the patients sit on the terrace in front of the pavilion, and in suitable weather many of the patients have the beds placed there and sleep there. For their use in stormy or windy weather two large shelters have recently been erected, and have proved of very great service.

"(2) With regard to diet, it should be noted that while the system of 'forced feeding,' or hyper-alimentation, formerly in vogue in many sanatoria, is not carried out, patients are directed and encouraged to acquire the habit of taking large meals. The results, as shown in the weight-charts, leave little to be desired.

"The dietary employed presents no special features beyond the extensive use of milk, of which each patient receives 2½ pints per diem. While the diet is modified to suit the requirements of patients under special conditions, most patients are placed on the same standard dietary, which is varied so far as circumstances permit. The following may be taken as a sample dietary for one week:—

TABLE V.

	Sunday.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
Breakfast, 8.30 a.m.	Porridge Fried Bacon Bread Butter Tea Milk, ½ pt.	Porridge Boiled Eggs Bread Butter Tea Milk, ½ pt.	Porridge Ham Bread Butter Tea Milk, ½ pt.	Porridge Fried Bacon Bread Butter Tea Milk, ½ pt.	Porridge Fresh Herrings Broad Butter Tea Milk, ½ pt.	Porridge Liver & Bacon Bread Butter Tea Milk, ½ pt.	Porridge Fried Bacon Bread Butter Tea Milk, ½ pt.
Dinner, 12.30 p.m.	Cold Beef Beetroot Baked Potatoes Jam Tarts or Blane Mange & Stewed Fruit Milk, ½ pt.	Roast Mutton Greens Potatoes Rice Puddings Milk, ½ pt.	Roast Beef Potatoes Apple Puddings or Jam Rolls Milk, ½ pt.	Boiled Mutton Carrots, Pars- nips, etc. Potatoes Sago Puddings Milk, ½ pt.	Roast Beef Potatoes Date or Fig Puddings Milk, ½ pt.	Irish Stew or Stewed Rabbit Potatoes Rice Puddings Milk, ½ pt.	Roast Beef Greens Potatoes Bread & Butter Puddings Milk, ½ pt.
Tea, 4.30 p.m.	Tea Bread & Butter Jam	Tea Bread & Butter or Dripping Syrup	Tea Bread & Butter Syrup	Tea Bread & Butter Jam	Tea Bread & Butter Dripping Syrup	Tea Bread & Butter Syrup	Tea Bread & Butter Syrup
Supper, 7.30 p.m.	Scotch Broth Bread Tapioca Puddings Milk, ½ pt.	Shepherd's Pie Bread Butter Milk, ½ pt.	Lentil Soup Bread Tapioca Puddings Milk, ½ pt.	Fried Hake Bread Butter Milk, ½ pt.	Cold Meat Beetroot Bread Tapioca Puddings Milk, ½ pt.	Boiled Cod Parsley Sauce Bread Butter Milk, ½ pt.	Stew Bread Butter Cheese Milk, ½ pt.
7 a.m.	Milk, ½ pt.	Milk, ½ pt.	Milk, ½ pt.	Milk, ½ pt.	Milk, ½ pt.	Milk, ½ pt.	Milk, ½ pt.

Salterley Grange Sanatorium—*(continued)*.

Salterley Grange Sanatorium (*continued*).

"The cost of the above dietary is 9/- per head per week.

"As stated above, the attempt is made to 'overfeed' the patient. In each case an endeavour is made to raise each patient's weight to a height slightly above the normal weight. Reference to the tables at the end will show that this is usually accomplished. An attempt was made to ascertain the highest known weight of each patient for the purpose of comparison, but this was found to be impracticable, as so many patients (particularly among the female patients) had only very vague and unreliable ideas of their weights before the rise of the disease. Comparison with the average weights for height, age, and sex proved little more satisfactory, as patients are found to vary so widely in bodily habit and build. It is satisfactory to note, however, that the *average* weight of the patients discharged was considerably higher than the average weight of a so-called 'normal' individual of the same height.

TABLE VI.

	Males.	Females.
Average height of patients discharged ...	5ft. 6in.	5ft. 1in.
Average weight of patients discharged ...	10st. 10lbs.	8st. 8lbs.
Average weight of normal individual of same height	10st. 5lbs.	7st. 12lbs.

"It should be noted that the weights are, in the majority of instances, those of patients who have been employed in manual work for many weeks. Only one patient failed to gain weight, and she gained weight since leaving the institution: none lost weight. The highest recorded gain was 24¼lbs., but this has been exceeded by a patient at present in the Sanatorium.

TABLE VII.

	Males.	Females.
Minimum gain in lbs.	4¾	0
Maximum gain in lbs.	24¼	21
Average gain in lbs.	13½	9

"(3) The third essential line of treatment consists in the regulation of the bodily rest and exercise. All patients on first reaching the Sanatorium are kept at rest in bed for about a week, during which time close observation is made to estimate the activity of the disease. At the end of this period the patient is, if his physical condition is found to make it permissible, allowed up for so many hours a day, during which time he is kept resting on a lounge chair. Gradually he is allowed more and more 'hours up,' and when it is considered advisable he is directed to take so much walking exercise, the amount being prescribed for him daily, according to his physical condition. In any case, rest is enforced during certain

hours of the day, and, indeed, forms an important part of the day's routine, even in the case of those patients who are capable of work. It is, however, the part of the treatment which is apt to prove most irksome and distasteful to patients accustomed to much activity.

"The routine of the day for patients not confined to bed is:—

TABLE VIII.

7.30	Called. Temperature taken. Rise. Bath. Dress.
8.30	Breakfast. Rest. Doctor's visit.
10–12.	Exercise or work.
12–12.30	Rest. Temperature taken.
12.30	Dinner. Rest.
2–4	Exercise or work.
4.0	Rest.
4.30	Tea. Rest.
5.30	Temperature taken.
5.30–6.30	Recreation.
6.30	Rest. Doctor's visit.
7.30	Supper. Retire to bedrooms.
9.0	Lights out.

"When the patient's condition permits it, some of the time spent in exercise is given up to work, and ultimately all the four exercise hours are spent in manual work, which is graduated in severity to suit the patient's capabilities.

"Recent progress in the treatment of phthisis owes much to the introduction of graduated labour as a therapeutic agent. In no Sanatorium is its value so marked as in one for the treatment of patients belonging to the working classes. In addition to the known value of manual work in improving the general physical condition and muscular tone of the patients, it serves a most useful purpose in occupying the patient's attention and removing the feeling of idleness and ennui which is so keenly felt by many patients who are not accustomed to a life of leisure. It further fits the patient for the resumption of the manual work by which he earns his living, so that he is able to undertake work as soon as he quits the Sanatorium, while at the same time it ensures that the increase in his weight is due to the accession of muscle, and not entirely of an excess of fat. To serve these ends the labour must be graduated, and when first embarked upon must be very light and easy. Gradually, as the patient improves, he is placed on more and more laborious work, until he is able to work five hours per day with spade, pick, barrow, or cross-cut saw, etc., as the case may be.

"The labour of the patient has been put to many useful ends. A considerable amount of light work in the garden and elsewhere has been done; paths have been made and cleared in the wood and elsewhere; a large area of turf has been laid; much help has been rendered in the construction of the shelters and garden seats; the lawns

Salterley Grange Sanatorium—(*continued*).

are kept mown, and the avenue and paths swept; several trees have been felled and sawn up, and the brushwood in front of the chalets has been cleared: shelters, garden seats, and gates have been painted. The cleaning of the patients' own rooms and of the corridors, annexes, and shelters is largely entrusted to the patients, who also keep the brasswork polished and keep the institution supplied in firewood. The flower-beds and rockeries at the back of the pavilions were entirely laid out and made by the patients.

"The patients are allowed and encouraged to indulge in such various *recreations* as are suited to their physical condition. Naturally games involving much strain or excitement are forbidden. Bowls and croquet are the chief outdoor amusements indulged in, and were very popular in the summer months. In winter indoor games such as cards, chess, draughts, dominoes, etc., are resorted to. For the benefit of those in bed there is a suitable selection of books, papers, periodicals, etc.

"As regards special treatment, little need be said, except that drugs are not used save to meet occasional demands. Tuberculin has been utilised on several patients, in many cases the results being sufficiently favourable to justify its further use.

"The *results of treatment* during the past year may be gathered from the following tables. It may be noted that several patients completely lost all expectoration, and that in several others the sputum was apparently free from tubercle bacilli on the patient's discharge.

TABLE IX.

	On Admission.			On Discharge.			
	+	−	Total	+	−	Not examined	Total
Males	29	11	40	7	16	3	26
Females	16	20	36	3	18	1	22
Total	45	31	76	10	34	4	48

TABLE X.

List of Complications suffered from by Patients.

Post Nasal Obstruction	9
Pleurisy	4
Bronchitis	3
Neurasthenia	2
Tuberculous Peritonitis (old standing)	2
Epilepsy	1
Tertiary Syphilitic Lesions	3
Tuberculous Adenitis	1
Retroversion of Uterus	1
Inflamed Hernia	1
Laryngeal Conditions:—	
Catarrhal	1
Syphilitic	1
Tuberculous	2

"Of the 48 patients discharged it should be noted that one left after six days' treatment on account of home-sickness, one was discharged as unsuitable for treatment (epileptic), one was dismissed for breach of regulations, one stayed less than four weeks, and left against advice.

"The results in the remaining 44 may be tabulated as follows:—

TABLE XI.

	Pulmonary Condition.					General Condition.		
	Arrested	Much improved.	Improved.	No improvement.	Total.	Very good.	Good.	Fair.
Males ...	8	9	4	2	23	15	6	2
Females ...	9	9	1	2	21	14	3	4
Total ...	17	18	5	4	44	29	9	6

"*After History.*—The ultimate results of Sanatorium treatment cannot be gauged by the consideration of the immediate results recorded on the patient's discharge. Every effort is made to keep in touch with discharged patients, so that their subsequent history may be known. Forty-three of the discharged patients were invited to come to the Queen's Hospital to be re-examined on January 13th, and of these no less than 35 actually presented themselves. Of the absentees, some had changed their address, one or two wrote to excuse themselves on the grounds of being unable to quit their business or of distance from Birmingham of their homes.

"It is evident that the treatment of consumptive patients does not end with their discharge from the Sanatorium. Some of the discharged patients have found it difficult or impossible to obtain regular or even casual employment, though physically fit to undertake it. It is unfortunate that few things have such a deleterious effect on the patient's health as the continued anxiety of unavailingly searching for work and the faulty nutrition which his lack of employment entails. It is gratifying, however, to note that the majority of the patients who reported themselves were in more or less regular employment, and that those who were in regular work appeared to be well maintaining the improvement recorded.

"I am,

"Yours obediently,

"PAUL MATHEWS, M.D."

TUBERCULOSIS AND THE MILK SUPPLY.

Tuberculosis and milk supply

On October 12th the following letter was sent to every farmer supplying milk to Birmingham whose farm buildings were situated within ten miles of the City: —

"City of Birmingham,
"Health Department,
"The Council House.

"Dear Sir,

"*Cattle Tuberculosis.*

"The Health Committee desire to offer you the necessary veterinary assistance and tuberculin for the eradication of tuberculosis from your dairy herd on the conditions set out in this letter. The primary object is that the milk supply of Birmingham shall be as free from the infection of tuberculosis as possible. The details of the scheme are as follows: —

"(*a*) The scheme to apply only to cowsheds situate within ten miles of the City, and from which milk is sent to Birmingham, with the additional limitation that it shall only apply to sheds suitable for the purpose.

"(*b*) The Corporation to supply free of charge the necessary tuberculin and veterinary assistance for the testing of the cows twice annually, and also the necessary veterinary assistance and advice in carrying out the scheme.

"(*c*) The farmer to undertake to separate the diseased from the healthy cows, and to gradually get rid of the diseased animals. Wasters and cows with tuberculosis of the udder to be dried off and sold for slaughter.

"(*d*) The farmer to permit the marking of animals free from tuberculosis by means of a lead button on one ear.

"(*e*) The farmer to carry out the necessary disinfection after the removal of an infected cow from the shed.

"(*f*) A certificate to be issued quarterly to those farmers who keep their herds free from tuberculosis as follows: —

"Quarter ending .....

"I hereby certify that on behalf of the Corporation of the City of Birmingham I have visited the farm occupied by

.....

.....

.....

and examined the cows and farm premises. I found that proper precautions were being taken to keep the

cows free from tuberculosis, and that they were housed under hygienic conditions. Tuberculosis and milk supply —(*continued*).

"This certificate must not be used after ...., 19 .

"Signed .....
Veterinary Superintendent to the Corporation of Birmingham.

"(*g*) A list of farms at which the cattle are being kept free from tuberculosis to be printed and supplied to any person in Birmingham who desires such list.

"NOTE.

"1.—Pending the time when the herd shall be entirely free from tuberculosis, reacting animals, except those having tuberculosis of the udder, may be kept and milked with a view to the most profitable use being made of them before they are disposed of.

"2.—Cows purchased to replace infected stock should be bought with a veterinary certificate to the effect that they have been tested within a month and found not to react to tuberculin, or they should be bought subject to their being returned if they react to the test. Until tested they should be kept in a shed by themselves.

"3.—It is probable that two or three years will be occupied in freeing the herd from tuberculosis unless the farmer chooses to immediately sell reacting animals, which would eliminate any risk of infecting the healthy, but would be likely to entail some loss.

"The advantages of such a scheme will be:—

"(*a*) There will eventually be a supply of tubercle-free milk to Birmingham from cows kept under hygienic conditions.

"(*b*) Even during the preliminary stage, when the farmer is freeing his herd, there will be a great improvement in the condition of the cattle and of the sheds at most of the farms.

"(*c*) To the farmer the advantage will be that he will obtain free of charge the necessary veterinary assistance and advice to enable him to free his herd of diseased animals, with the result that he should get the best price for his milk, and will be spared the loss which he now sustains from the wasting of tubercular cattle.

"(*d*) To the butcher there will eventually be the advantage of being able to purchase even old animals with a knowledge that they are free from tubercular disease.

"Against these advantages there must be set:—

"(*a*) The probable slight increase in the price of milk to the consumer for some years to come.

"(*b*) There will be the cost of the veterinary assistance to the Corporation.

Tuberculosis and milk supply —(*continued*).

"(*c*) To the farmer there will be the necessity of exercising constant vigilance to prevent re-infection, and during the period that he is clearing his herd there will be some inconvenience and a certain small expense.

"I enclose copy of a report on what is being done in Denmark in regard to freeing herds of cattle from tuberculosis.

"If you desire to avail yourself of this scheme, I should be glad if you would apply directly to J. Malcolm, Esq., F.R.C.V.S., Veterinary Superintendent, Holliday Street Wharf, Birmingham. Either Mr. Malcolm or myself will be glad to discuss the matter with you should you require further information.

"Yours faithfully,

"JOHN ROBERTSON,

"Medical Officer of Health."

As a result of this letter 20 farmers applied to have their cows tested. Of these four were declined, as the sheds were unsuitable. For the remaining sixteen 803 cows were tested, with the result that 567 were found to be free from tuberculosis, 209 gave a definite reaction, while 27 were considered to be doubtful. Of the 803 cows tested 521 were done by Mr. Malcolm, the Veterinary Superintendent, or his assistant, and 282 by local veterinary surgeons under agreement with the Corporation.

The percentage of reacters, or doubtful reacters, was therefore 29·3. As, however, many of the cows tested belonged to special herds, it is probable that more than 30 per cent. of the cows in general herds would be found to be tubercular. The fees paid to local veterinary surgeons for this testing work when done for the Corporation are as follows:—

1, 2, 3, or 4	cows	...	...	...	...	£1	1	0
5	,,	...	...	...	...	1	5	0
6	,,	...	...	...	...	1	10	0
7	,,	...	...	...	...	1	15	0
8, 9, or 10	,,	...	...	...	...	2	0	0
11 or 12	,,	...	...	...	...	2	2	0
13	,,	...	...	...	...	2	5	0
14	,,	...	...	...	...	2	10	0
15	,,	...	...	...	...	2	12	0
16	,,	...	...	...	...	2	16	0
17	,,	...	...	...	...	3	0	0
18	,,	...	...	...	...	3	3	0
19	,,	...	...	...	...	3	6	0
20 to 24	,,	...	...	...	...	3	10	0
25 to 28	,,	...	...	...	...	3	15	0
29 to 34	,,	...	...	...	...	4	0	0
35 to 39	,,	...	...	...	...	4	10	0
40 to 50	,,	...	...	...	...	5	0	0

Tuberculosis and milk supply —(*continued*).

Further details of the work done under this scheme are given in Mr. Malcolm's report, on page 113.

During the year 531 samples of milk supplied to dealers and others in the City were bacteriologically examined for tubercle bacilli at the University on behalf of the Health Committee.

The following table shows the number of samples examined, the origin of the samples, and the number in which tubercle bacilli were found, during each complete year since such examinations were instituted:—

	From Churns in City.		From Cows in City Sheds.		From Cows outside City.		Total Samples	No. found Tubercular
	No. of Samples	No. Tubercular	No. of Samples	No. Tubercular	No. of Samples	No. Tubercular		
1907 ...	141	9	21	3	49	4	211	16 or 8%
1908 ...	54	7	19	2	29	1	102	10 or 10%
1909 ...	111	8	4	0	103	7	218	15 or 7%
	206	24 or 12%	44	5 or 11%	181	12 or 7%	531	41 or 8%

It will be noticed that the percentage of tubercular samples has fallen somewhat. This corresponds with the results obtained in Manchester, Liverpool, and certain other towns where similar investigations have been made.

OTHER CAUSES OF DEATH.

Syphilis

Syphilis.—Thirty-four deaths were registered as due to this disease, as against 35 in the previous year, 25 of these deaths being in infants under one year of age. It is doubtful whether the statement as to the number of deaths from this disease is even approximately correct.

Alcoholism.

Alcoholism.—Nineteen deaths were due to alcoholism, as compared with 24 in 1908. During the past ten years the number of deaths have been as follows:—

DEATHS FROM ALCOHOLISM.

1900	...	27	1905	...	19
1901	...	44	1906	...	21
1902	...	24*	1907	...	20
1903	...	31	1908	...	24*
1904	...	32	1909	...	19

*53 weeks.

Closely related to the deaths from alcoholism are those from cirrhosis of the liver, the figures for the past ten years being as follows:—

Alcoholism—(*continued*).

	Alcoholism	Cirrhosis of Liver.	Total.
1900 ...	27	111	138
1901 ...	44	94	138
1902 ...	24*	95*	119*
1903 ...	31	100	131
1904 ...	32	71	103
1905 ...	19	80	99
1906 ...	21	71	92
1907 ...	20	74	94
1908 ...	24*	59*	83*
1909 ...	19	60	79

*53 weeks.

It will be noted that the two diseases—alcoholism and cirrhosis of the liver—show during the ten years a progressive decline, which is satisfactory.

Cancer.

Cancer.—The number of deaths from cancer in Birmingham was 424, as against 441 in the previous year. The total mortality from this disease during the past ten years, together with the death-rate in Birmingham and in England and Wales, is set out in the following table. It will be noted that the mortality in Birmingham is, with considerable uniformity, less than that in England and Wales.

	Total deaths from Cancer in Birmingham.	Death-rate per 1,000 in Birmingham.	Death-rate per 1,000 in England and Wales.
1900	368	·71	·83
1901	395	·76	·84
1902	383*	·72	·84
1903	413	·78	·87
1904	400	·74	·88
1905	437	·81	·88
1906	460	·84	·92
1907	419	·76	·91
1908	441*	·78	·92
1909	424	·75	—

*53 weeks.

The 424 deaths were distributed among males and females at the following ages:—

	Deaths from Cancer during 1909. Males.	Females.	Total.
Under 1 year	0	0	0
1 and under 5 years	0	0	0
5 ,, 10 ,, ...	0	1	1
10 ,, 15 ,, ...	0	0	0
15 ,, 20 ,, ...	0	1	1
20 ,, 25 ,, ...	1	2	3
25 ,, 35 ,, ...	4	10	14
35 ,, 45 ,, ...	16	30	46
45 ,, 55 ,, ...	27	59	86
55 ,, 65 ,, ...	51	72	123
65 ,, 75 ,, ...	53	56	109
75 ,, 85 ,, ...	17	20	37
85 and upwards	1	3	4
Total	170	254	424

Cancer—(*continued*)

It is sometimes said that certain areas are more affected than others by this disease. The following table shows the mortality-rate in each of the Wards during the past five years, together with the mean rate:—

	1905.	1906.	1907.	1908.	1909.	Mean of 5 years.
Rotton Park ...	·87	·73	·73	·79	·75	·77
All Saints' ...	·88	·85	·64	·71	·65	·75
Ladywood ...	1·01	·81	1·01	·85	·78	·89
St. Paul's ...	·96	·86	1·11	·78	·90	·92
St. George's ...	·59	·78	·55	1·03	·59	·71
St. Stephen's ...	·77	·87	·52	·76	·63	·71
St. Mary's ...	·71	1·30	·45	·92	1·13	·90
St. Bartholomew's	·73	·85	1·04	1·32	1·09	1·01
Market Hall ...	·88	·74	·67	·23	·80	·66
St. Thomas' ...	·81	1·16	·81	·63	1·04	·89
St. Martin's ...	·85	·79	·79	·85	·79	·81
Edgb. & Harborne	1·00	1·01	·87	·91	·69	·90
Deritend ...	·93	1·47	1·04	·79	·87	1·02
Bordesley ...	·58	·70	·78	·89	·73	·74
Duddeston ...	·90	·74	·74	·72	·69	·76
Nechells	·64	·89	·71	·70	·56	·70
Balsall Heath ...	·99	·83	·90	·82	1·24	·96
Saltley	·66	·65	·57	·72	·50	·62

Premature birth.

Premature Birth.—In the next table the number of deaths from premature birth, together with the death-rate in Birmingham and in England and Wales from this cause, are set out:—

	Deaths.	Death-rate per 1,000. Birmingham.	England and Wales.
1900 ...	353 ...	·68 ...	·57
1901 ...	349 ...	·67 ...	·57
1902 ...	361* ...	·67 ...	·57
1903 ...	365 ...	·68 ...	·57
1904 ...	377 ...	·70 ...	·58
1905 ...	304 ...	·56 ...	·55
1906 ...	323 ...	·59 ...	·55
1907 ...	319 ...	·58 ...	·52
1908 ...	338* ...	·60 ...	·53
1909 ...	318 ...	·57 ...	—

* 53 weeks.

Bronchitis.

Bronchitis.—The number of deaths from bronchitis was 925, as compared with 922 in the previous year. The death-rate in Birmingham is almost uniformly higher than that in England and Wales. This is a condition found in many other towns.

	Death-rate per 1,000. Birmingham.	England and Wales.
1900 ...	— ...	1·69
1901 ...	2·06 ...	1·36
1902 ...	1·88 ...	1·32
1903 ...	1·69 ...	1·11
1904 ...	2·00 ...	1·25
1905 ...	1·62 ...	1·14
1906 ...	1·61 ...	1·03
1907 ...	1·67 ...	1·21
1908 ...	1·63 ...	1·09
1909 ...	1·64 ...	—

Pneumonia.

Pneumonia.—Pneumonia caused 765 deaths, as compared with 718 in the previous year. As in the case of bronchitis, the mortality in Birmingham is higher than in England and Wales. The difference, however, between the City and the whole of England is not so marked as in the case of bronchitis.

	Death-rate per 1,000.	
	Birmingham.	England and Wales.
1900 ...	— ...	1·37
1901 ...	1·73 ...	1·15
1902 ...	1·60 ...	1·41
1903 ...	1·45 ...	1·22
1904 ...	1·67 ...	1·28
1905 ...	1·49 ...	1·30
1906 ...	1·40 ...	1·22
1907 ...	1·57 ...	1·34
1908 ...	1·27 ...	1·18
1909 ...	1·36 ...	—

In the following table are shown the deaths at different ages from lobar pneumonia, lobular pneumonia, and pneumonia not defined:—

Ages.	Lobar Pneumonia.	Lobular Pneumonia.	Pneumonia undefined.
Under 1 year	8 ...	119 ...	30
1 and under 5 years	24 ...	155 ...	59
5 „ 10 „	2 ...	10 ...	13
10 „ 15 „	1 ...	0 ...	3
15 „ 20 „	5 ...	2 ...	5
20 „ 25 „	6 ...	0 ...	4
25 „ 35 „	29 ...	3 ...	18
35 „ 45 „	18 ...	4 ...	23
45 „ 55 „	29 ...	8 ...	27
55 „ 65 „	16 ...	20 ...	24
65 „ 75 „	13 ...	30 ...	30
75 „ 85 „	3 ...	9 ...	10
85 and over	2 ...	3 ...	0

By far the larger number of deaths from this disease occur within the first two years of life.

Suffocation.

Accidental Suffocation.—The deaths from this cause numbered 65, as compared with 93 in 1908, and 81 in 1907. The death-rate from this cause was the lowest recorded, although the mortality is more than twice as great as that in the whole of England and Wales, as is indicated by the following figures:—

	Birmingham.	England and Wales.
1900 ...	·19 ...	·07
1901 ...	·18 ...	·06
1902 ...	·14 ...	·06
1903 ...	·19 ...	·06
1904 ...	·18 ...	·06
1905 ...	·15 ...	·05
1906 ...	·17 ...	·05
1907 ...	·15 ...	·05
1908 ...	·16 ...	·05
1909 ...	·12 ...	—

Inquests.—Inquests were held on 357 deaths during the year, being 4·1 per cent. of the total deaths. During the past ten years the following number of inquests have been held. The number of inquests in the 76 great towns during the same period is also indicated in the table :— Inquests.

	No. of Inquests in Birmingham.	Percentage on Total Deaths. Birmingham.	76 Great Towns.
1900	580	5·2	7·6*
1901	594	5·5	7·9*
1902	556	5·6	7·7
1903	576	6·1	7·9
1904	530	5·0	7·4
1905	453	5·2	7·8
1906	435	4·7	7·7
1907	438	4·9	7·9
1908	456	5·1	8·0
1909	357	4·1	7·8

*33 Towns.

DISINFECTION.

The following statement shows the number of houses and the articles of clothing and bedding disinfected during the year :— Disinfection.

	1905	1906	1907	1908	1909
Houses disinfected after Small-pox	32	0	0	0	0
,, ,, ,, Puerperal Fever	35	26	33	12	19
,, , ,, Scarlet Fever	1487	1611	2258	2102	2659
,, ,, ,, Diphtheria and Croup ...	636	691	972	735	730
,, ,, ,, Typhoid Fever	190	172	217	167	102
,, ,, ,, Phthisis ...	649	554	692	724	650
Beds and Mattresses disinfected ...	6788	6456	8072	7776	7285
Sheets, Blankets and Counterpanes disinfected	9877	10316	12442	11837	10599
Pillows and Bolsters disinfected ...	6894	6970	8972	8091	8728
Garments disinfected	9946	10693	10310	11251	8381
Carpets disinfected	2164	2335	2858	2398	1911
Other Articles disinfected	8937	10529	10438	9369	6523

CITY HOSPITALS.

The following table shows the number of patients* admitted to the City Hospitals since they were first opened by the Corporation :— City Hospitals.

* In a small percentage of the cases the disease proved not to be that for which the patient was admitted.

City Hospitals. (*continued.*)

	Smallpox.	Scarlet Fever.	Diphtheria.	Typhoid Fever.
1874	194	...	...	...
1875	420	20	...	...
1876	11	38	...	...
1877	38	43	...	...
1878	20	424	...	...
1879	4	184	...	...
1880	16	170	...	...
1881	17	333	...	...
1882	105	627	...	...
1883	1090	638	...	...
1884	437	360	...	...
1885	81	204	...	...
1886	2	428	...	...
1887	10	438	...	...
1888	18	528	...	...
1889	0	1801	...	...
1890	0	2525	...	...
1891	44	1225	...	...
1892	24	1131	...	...
1893	963	1339	...	...
1894	2050	1539	...	...
1895	98	2595	...	...
1896	14†	2812	...	...
1897	0	1641	...	...
1898	0	1083	...	...
1899	0	1052	...	...
1900	0	1814	...	...
1901	0	2959	...	229
1902	68	4534	...	119
1903	250	2455	...	14
1904	8	1437	...	119
1905	36	1489	321	109
1906	0	1557	425	121
1907	0	2243	650	153
1908	0	2062	510	110
1909	0	2329	494	46

† Removed to Aston Smallpox Hospital, by arrangement with the District Council.

The two following reports have been presented by the Medical Superintendents of the two large City Hospitals, dealing in detail with the work of the year. They refer to the calendar year, not to the statistical year, which is not quite identical with the calendar year.

Lodge Road Hospital.

REPORT ON LODGE ROAD HOSPITAL.

City Hospital,
Lodge Road, Birmingham.
April, 1910.

Mr. Chairman and Gentlemen,

I have the honour to submit to you a report of the hospital for the year ended 31st December, 1909.

As this is the first time that I have been requested to submit such a report, I have no comparative statistics to lay before you. I have endeavoured, however, in the tables which follow, to shew the incidence of the different diseases treated, divided according to age and sex, the complications arising and the mortality rate, etc.

Owing to the small number of cases of typhoid fever occurring in the City, the typhoid fever pavilion at this hospital was closed, as the General and Queen's Hospitals consented to deal with the cases requiring removal.

Lodge Road Hospital—(*continued*).

The only structural alteration of any importance was that a new calorifier was put in to take the place of two heaters supplying the kitchen and pavilion "A" which were quite worn out. Several of the wards were cleaned and painted during the year. The floors of some of the pavilions and one or two other alterations I would desire you to have seen to as soon as possible.

STATISTICS.

The total number of cases treated during the year was 816; of these 607 were discharged cured, and 75 died, giving a percentage mortality of 9·1 on the number of cases treated.

TABLE I.

Disease.	Remaining Dec. 31, 1908.	Admitted during 1909.	Total under treatment, 1909.	Discharged during 1909.	Died during 1909.	Mortality p.c.	Remaining 31st Dec., 1909.
Scarlet Fever	—	181	181	83	8	4·4	90
Diphtheria	73	496	569	461	58	10·2	50
Typhoid Fever	19	47	66	58	7	10·6	1

TYPHOID FEVER.

Number remaining December 31st, 1908	19	
Cases admitted from January 1st, 1909, to December 31st, 1909	47	
Total treated during the year	—	66
Discharged cured	58	
Died	7	
Total	—	65
Number remaining 31st December, 1909		1

The mortality calculated on the number of admissions is 14·8 per cent. Two cases were moribund on admission, and died within 48 hours. One death was due to acute tuberculosis; if these be deducted from the total number of deaths, it leaves a percentage mortality of 8·6 on the number of cases admitted.

The error of diagnosis is 17·0 per cent. on the admissions. None of the cases developed typhoid fever in hospital. They were as follows:

Errors of Diagnosis.	No.	Died.
Gastro enteritis	3 ...	—
Constipation	1 ...	—
Phthisis	1 ...	—
Acute tuberculosis	1 ...	1
Scarlet Fever	1 ...	—
Pneumonia and Pleurisy	1 ...	—

The following table shows the complications that occurred:—

Complications.	No.	Died.
Relapse	1 ...	—
Hemorrhage	1 ...	—
Peritonitis	3 ...	2
Perforation	1 ...	1
Pneumonia	3 ...	3
Pleurisy	1 ...	—
Ulcerative stomatitis	1 ...	—
Parotitis	1 ...	—
Abscess	1 ...	—
Cholecystitis	1 ...	—

Lodge Road Hospital — (*continued.*)

The blood in 41 cases was examined for the "Widal reaction." A "positive" result was obtained in 36. All the cases mentioned in the errors in diagnosis gave "negative" results. No test was performed in three cases which were too ill, all three dying very soon after admission.

The following table shews the incidence of the disease on admission and deaths divided according to age and sex:—

TYPHOID FEVER ADMISSION AND DEATHS DURING 1909.

Divided according to age and sex.

AGES.	MALES		FEMALES		TOTAL.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1—5 years ...	1	—	—	—	1	—
5—10 ,, ...	3	—	2	1	5	1
10—15 ,, ...	3	—	3	1	6	1
15—20 ,, ...	3	—	2	—	5	—
20—25 ,, ...	3	1	9	—	12	1
25—30 ,, ...	1	1	3	—	4	1
30—35 ,, ...	—	—	2	—	2	—
35—40 ,, ...	3	2	1	—	4	2
40—45 ,, ...	3	—	—	—	3	—
45—50 ,, ...	2	—	2	1	4	1
50—55 ,, ...	—	—	—	—	—	—
55—60 ,, ...	—	—	—	—	—	—
60—65 ,, ...	—	—	—	—	—	—
65—70 ,, ...	—	—	1	—	1	—

DIPHTHERIA.

Number remaining 31st December, 1908	73	
Cases admitted from 1st January, 1909, to 31st December, 1909	496	
Total treated during year	——	569
Discharged cured	461	
Died	58	
Total	—	519
Remaining 31st December 1909		50

The mortality calculated on the number of admissions is 11·7 per cent. Nineteen cases died within 48 hours of admission, some of these dying within a few minutes and others within a few hours. If these cases are deducted as not having come under proper hospital treatment, the mortality rate is reduced to 7·8 per cent., a very low one for diphtheria

The following table shows :—

DIPHTHERIA ADMISSIONS AND DEATHS DURING 1909, Divided according to age and sex.

AGES.	MALES.		FEMALES.		TOTAL.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died
Under 1 year ...	4	1	8	3	12	4
1—5 years ...	95	16	94	18	189	34
5—10 ,, ...	56	6	61	8	117	14
10—15 ,, ...	29	1	30	—	59	1
15—20 ,, ...	13	1	35	1	48	2
20—25 ,, ...	9	1	23	—	32	1
25—30 ,, ...	6	—	15	1	21	1
30—35 ,, ...	—	—	4	1	4	1
35—40 ,, ...	5	—	6	—	11	—
40—45 ,, ...	1	—	1	—	2	—
45—50 ,, ...	1	—	—	—	1	—

It will be seen from the tables that the mortality is very high in children up to the tenth year, being highest, viz., 18·9 per cent., in children during the first quinquennial period. Many of the deaths up to this period must be attributed either to ignorance or neglect on the part of parents. These young children are unable to complain of sore throat, and the glandular swelling of the neck resulting from faucial diphtheria is frequently as I have been told taken to be due to mumps or cold, and as a result the child is subsequently brought into hospital on the 5th or 6th day of illness, in a profound state of toxæmia, and collapse with no hope of recovery.

The high fatality rate of the disease in young children is in no small measure due to this cause. Many cases of laryngeal diphtheria, or "croup" as it is commonly called, are considered to be due to cold, of which not much notice is taken, till again when the child is admitted it is either too late to operate or an operation is of little or no benefit owing to failure of the heart, or extension of the membrane downwards into the lungs.

If I might venture to make a suggestion here, it is that if the people, especially the working-classes, were in some way made to understand that sudden glandular swellings of the neck and croupy coughs are serious conditions, and that medical advice should be sought as soon as possible, I feel sure that many young lives that are now sacrificed would in this way be saved.

In 59 of the cases admitted the larynx was affected with diphtheria either primarily or as an extension of the disease from the fauces.

Operative treatment was required only in 30 cases, or a little over 50 per cent. Six cases were intubated, and three died, giving a mortality of 50 per cent.

Tracheotomy was performed on 24 cases, and six of these died, giving a mortality of 25 per cent. Seven of the remaining cases died from heart failure.

The following table shows the errors in diagnosis —

Errors in Diagnosis.	Number.	Died
Scarlet Fever	14 ...	1
Measles	8 ...	1
Tonsillitis (acute and follicular) ...	26 ...	—
Whooping Cough and Pneumonia ...	1 ...	1
Typhoid Fever	1 ...	—
Syphilis	1 ...	—

Lodge Road Hospital—(*continued*).

Table showing the number of cases in which two diseases were co-existing at the time of admission :—

	Co-existing Diseases.	Number.
Diphtheria	+ Scarlet Fever...	16
,,	— Measles	1
,,	— Whooping Cough	4
,,	+ Varicella	2

Table showing the number of cases in which a second infection was contracted in hospital :

Number.	Disease.	Developed in Hospital
46	Diphtheria	Scarlet Fever
6	,,	Measles
4	Scarlet Fever	Measles
2	,,	Varicella
17	Diphtheria + Scarlet Fever	Measles
4	Diphtheria + Scarlet Fever	Whooping Cough
4	Diphtheria + Scarlet Fever	Varicella

This is practically unavoidable under the present amount of isolation room available for the observation of cases, especially of diphtheria.

I pointed out in a special report I submitted to you in October, 1905, when it was decided to open Lodge Road for the treatment of diphtheria, that all cases notified as such and brought into hospital should be isolated and kept under observation for a certain period (three weeks at least), in order that a bacteriological examination may be made to verify the diagnosis, and also to make certain that the patient is not suffering from some co-existing disease as well, such as scarlet fever. Such cases are often difficult or almost impossible to diagnose on admission, and the co-existing scarlet fever is only revealed later by the subsequent desquamation, or the diphtheria is only recognised by some form of paralysis which shows itself later. Another difficulty to be contended with is that the patient admitted in the acute stage of one disease may at the same time be incubating another : for example, a patient admitted with diphtheria or scarlet fever may be incubating measles, chicken pox, or whooping cough.

It is such cases as these that give rise to cases of cross-infection developed in hospital. We find it impossible under existing means to isolate cases sufficiently long to be certain that there is no other disease co-existing.

It is a matter of first importance, in my opinion, that sufficient "isolation" accommodation should be provided in our hospitals to minimise as far as possible this risk of "cross-infection," which not only endangers the life of a child recovering from severe illness of one disease, but it also prolongs the stay of not only the children who have contracted a second and sometimes even a third infection, but other children who have been exposed to infection have to be quarantined for certain periods, thus materially increasing the average stay and cost of each patient : the staff has also to be increased to deal with the difficulties arising, and the administration of the hospital is in many ways rendered more difficult.

Antitoxin was administered previous to admission in only 36 of the 496 of the diphtheria cases admitted during the year, and only five of the 58 deaths recorded received such treatment prior to admission. No doubt much of the antitoxin supplied by the Health Committee is used for notified cases treated at home, and some of it as a prophylactic measure.

Lodge Road Hospital—(*continued*).

Still, it is surprising that at the present day, when the efficacy of anti-diphtheritic serum as a specific remedy in the treatment of diphtheria is established beyond doubt, especially if administered in the first two or three days of the disease, that so many cases are admitted into hospital without having received such treatment. The administration of the drug requires a certain amount of time and care, which no doubt many practitioners are unable to give to some of their patients. That being so, it would be well, I am sure, if in such cases of suspected diphtheria the practitioner would telephone the case at once to the Medical Officer of Health or to the hospital for immediate removal, to be followed in due course by the usual Notification Certificate.

Especially would this procedure be advisable in cases of laryngeal diphtheria or croup, where if the child is admitted in time an operation may be the means of saving its life.

SCARLET FEVER.

Owing to the large number of cases seeking admission, and the pressure at Little Bromwich Hospital, your Committee decided to open some of the wards here for scarlet fever cases.

Accordingly three pavilions were speedily got ready and were very quickly filled up.

Cases admitted from 21st September, 1909, to 31st December, 1909	181
Discharged cured	83
Died	8
Number remaining, 31st December, 1909	90

The mortality calculated on the number of admissions is 4·4 per cent.

If the three malignant cases that died within 48 hours of admission be deducted, it leaves a percentage mortality of 2·7.

Errors in Diagnosis.—In five cases the disease was complicated with diphtheria. One was a case of sore throat; two cases developed chicken pox, and one measles. There were no cases of post scarlatinal diphtheria.

The following table shows :—

SCARLET FEVER ADMISSIONS AND DEATHS DURING 1909, DIVIDED ACCORDING TO AGE AND SEX.

AGES.	MALES.		FEMALES.		TOTAL.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Under 1 year	1	—	3	—	4	—
1— 5 years	29	—	25	5	54	5
5—10 ,, ...	30	2	40	—	70	2
10—15 ,, ...	13	1	19	—	32	1
15—20 ,, ...	—	—	4	—	4	—
20—25 ,, ...	—	—	6	—	6	—
25—30 ,, ...	2	—	6	—	8	—
30—35 ,, ...	1	—	1	—	2	—
35—40 ,, ...	—	—	1	—	1	—

LABORATORY WORK.

Every case of diphtheria admitted is examined bacteriologically A swab is taken on admission, or as soon after as possible, and if a negative result is obtained, a second and even a third swab is taken to confirm results. No swab is then taken till the patients are about ready for discharge, when each case is examined one or more times till a clear negative result is obtained before the patient is permitted to go home.

Lodge Road Hospital *(continued).*

All cases of scarlet fever also in which it is suspected that diphtheria is present are examined bacteriologically, and all cases giving "positive" results are again examined like the diphtheria cases before they are discharged.

The "Widal" test, as already stated in the report, is made on every case of Typhoid Fever, and the blood examined one or more times to confirm results.

STAFF.

There was much sickness amongst the Staff during the year, the total number of days they were altogether off duty being 1,146:

6 Nurses were ill with scarlet fever.

5 Nurses were ill with diphtheria.

1 Nurse was ill with typhoid.

3 Nurses were ill with tonsillitis.

10 others were off duty at odd times with minor ailments, such as influenza, bronchitis, rheumatism, dyspepsia, diarrhœa, etc.

3 Maids were ill with diphtheria.

3 Maids were ill with tonsillitis.

11 others with minor ailments.

I am glad to say that no death occurred amongst them. It will be seen by the number of staff that were ill, and the number of days they were off duty, that it interfered greatly with the work of the hospital.

A good deal of this illness is due to the fact that new probationers and ward servants are engaged when our busy time comes, and unfortunately these new people invariably become ill a short time after commencing their duties, and are thus rendered useless to us for several weeks.

This necessarily puts a greater strain on the older nurses, who, in consequence, cannot get proper off duty time, which sooner or later tells on their own health, and thus we are at times in much difficulty to know how to get the nursing done.

From my experience of several years at this hospital, I have seen the same thing happen year after year, and I would venture to suggest that the "Nursing Staff" especially should not be reduced to an extent to correspond in any way to the number of cases remaining in hospital during the slack time of the year. This has always been a "vexed" question, and should be thoroughly looked into. I feel sure that if this is done the amount of sickness will be greatly reduced, and that the nurses will be in a fitter condition when the pressure comes, and that the work of the hospital would be carried out more satisfactorily.

The nurses continue to receive their lectures in anatomy, physiology, infectious diseases and nursing. In this I am assisted by the Assistant Medical Officer and Matron.

EXPENDITURE.

Owing to the fact that the accounts of the two hospitals have never been kept separately, it is almost impossible to give any accurate account of our own expenditure. I have been able, however, with the assistance of the steward and Mr. Cutts, to get the following figures:—

Lodge Road Hospital—*(continued).*

	£	s.	d.
Salaries and wages (Medical Officers, Nursing and domestic staff, etc.) ...	2,095	1	9
Repairs (including materials and wages)	794	13	11
Provisions, etc.	1,969	10	0
Wines and spirits	23	17	0
Aerated waters	15	6	0
Ironmongery, etc.	52	18	6
Drapery, clothing, boots, etc.	166	16	0
Washing materials	91	5	2
Printing and incidentals	32	4	6
Drugs (including antitoxin, serum tubes and surgical appliances)	274	5	1
Coal, gas and water	952	16	1
Rent and rates	372	14	0

Cost per patient per week 1 8 10½
Average stay per patient discharged, 48·08 days.

In conclusion, I have much pleasure in acknowledging my indebtedness to my colleague, Dr. W. H. Warwick, for his able assistance, not only in the work connected with the treatment of the patients, but also for his help in carrying out the work connected with the bacteriological department. To the Matron, Miss Cherrington, I am also much indebted for the willing and ready help she has always given me in the management of the hospital, and for her assistance in maintaining order and discipline amongst the staff; and for the care she has taken in seeing to the proper nursing of the patients.

I have also to thank Mr. Thorley, the steward, and the other members of the staff for the valuable assistance they have rendered me by their hearty co-operation in carrying out the work of the hospital.

My thanks are also due to the Chairman and members of the Health Committee for the kindness and consideration shown to me during my illness at the beginning of the year, and for their continued confidence and support.

I am,
Mr. Chairman and Gentlemen,
Your obedient servant,
E CHATELIER, M.B.
Medical Superintendent.

REPORT ON LITTLE BROMWICH HOSPITAL.

Little Bromwich Hospital.

To the Chairman and Members of the Health Committee.

GENTLEMEN,

LITTLE BROMWICH HOSPITAL.

During the year 1909 only patients reported to be suffering from scarlet fever have been admitted to the Little Bromwich Hospital.
The total number of patients under treatment has been 2,499.

Patients in hospital on January 1st, 1909 ...	352
Patients admitted during 1909	2,147
Patients discharged during 1909	2,065
Patients died during 1909	96
Remaining in hospital on December 31st, 1909	338

The average number of days' stay in hospital was 59·3.

The number of deaths, 96, gives a total fatality-rate, based on the number of cases admitted, of 4·4 per cent.

Little Bromwich Hospital—*(continued).*

Of these 96 deaths only 84 were due to scarlet fever and its complications, 12 being due to causes quite apart from scarlet fever, viz. :—

Measles	3
Diphtheria	1
Pneumonia	2
Bronchitis	3
Ulcerative stomatitis	1
Marasmus and malnutrition	1
Cellulitis of neck...	1

If these be deducted, the death-rate from scarlet fever, based on cases admitted, is 3·9 per cent.

Of the 84 deaths due to scarlet fever, 9 occurred within 24 hours of admission, and should therefore be deducted from the deaths of patients under treatment. With this correction, the death-rate from scarlet fever, based on the number of patients admitted and treated, would be 3·4 per cent.

More than two-thirds of the deaths occurred in children under five years of age, and are shown as follows :—

Under 1 year.	1—2 yrs.	2—3 yrs.	3—4 yrs.	4—5 yrs.	5—10 yrs.	10–15 yrs	15–20 yrs.	Over 20.
6	13	15	15	18	24	3	2	0
		67				29		

Corrected Diagnosis.—As is usual, a certain number of cases, received into hospital are found, on admission, not to be suffering from scarlet fever, but to be suffering from some other disease or presenting no signs of illness at all.

The number of such cases admitted during the year as scarlet fever, and found to be not suffering from such, is shown thus :—

Corrected Diagnosis.	No. of Cases.	No. which developed S.F. in Hospital.
Diphtheria	1	—
Measles	14	1
German measles	3	1
Chicken-pox	3	—
Whooping cough	2	—
Tonsillitis	15	5
Chronic discharge from nose or ear	2	—
Typhoid	1	—
Bronchitis or pneumonia	6	—
Burn rash	1	1
Septic rash after operation	1	—
Dentition rash	2	—
Nephritis	1	1
Other diseases...	10	2
Total	62	11
No definite disease on admission	41	6
Total	103	17

In addition to the above list of corrected diagnosis, a number of patients have been admitted suffering from other infectious disease in addition to scarlet fever, shown as follows :—

Scarlet Fever	+Whooping Gough	5
,,	+Chicken-pox	12
,,	+Ringworm	31
,,	+Diphtheria	3
,,	+Measles	1
,,	+Mumps	1
,,	+Scabies	1

During the year the following members of the staff contracted scarlet fever, but it is gratifying to report that all made excellent recoveries.

Medical Officer	1
Nurses	11
Maids	4

CROSS-INFECTION.

On the whole, the hospital has been comparatively free from cross-infection during the year 1909. By cross-infection is meant the introduction into a ward of infectious diseases other than the particular disease which is being treated in that ward.

Various infectious diseases continually make their appearance in scarlet fever wards without any known cause, but the chief methods by which cross-infection may be introduced are:—

(1) Patients admitted suffering from other diseases than scarlet fever.

(2) Patients admitted from houses where such other disease exists while not actually suffering from it themselves.

(3) Introduction of letters, parcels, toys, etc., from infected houses.

Every effort is made to prevent the occurrence of cross-infection.

Patients suffering from infectious disease other than scarlet fever are isolated on admission, and all patients coming from houses where such other disease is known to exist are also isolated.

Enquiries are always made when the patient is removed, whether any other infectious disease is present in the house, but it not unfrequently happens that the existence of other infectious disease is ignored or denied, and it is not until the patient develops some malady after admission that we have any knowledge, or suspicion, that he has previously been exposed to other infection.

All letters, parcels, toys, etc., are disinfected before being sent to the wards.

When cross-infection appears in a ward it is generally necessary to stop further admissions to that ward until the infecting disease is stamped out, or in some cases until the ward has been emptied and thoroughly disinfected. It will thus be seen that, from this point of view, small wards are more easily administered than large ones, and we find that our wards of 36 beds are more readily dealt with than the larger ones containing 60 beds.

It is somewhat difficult to give the exact expenditure on the hospital separated from that incurred at Lodge Road, but as far as can be ascertained the figures are as follows:—

Little Bromwich Hospital—*(continued).*

Salaries and Wages	£3,001	10	2
Repairs	1,109	4	2
Provisions, etc.	5,220	17	7
Wines and Spirits	33	5	0
Aerated Waters	16	10	0
Ironmongery, etc.	84	2	9
Drapery, Clothing, Boots, etc.	388	9	2
Washing Materials...	199	8	6
Printing and Incidentals...	85	9	0
Drugs and Surgical Appliances	190	18	2
Coal, Gas, and Water	2,301	6	0
Rents and Rates	316	1	7
Cost per Patient per week	0	13	6¾

Your obedient servant,

T. W. BEAZELEY, M.B.,

Medical Superintendent.

DISEASES OF ANIMALS COMMUNICABLE TO MAN.

The following report has been submitted by Mr. John Malcolm, F.R.C.V.S., the Veterinary Superintendent:—

Glanders and farcy.

GLANDERS AND FARCY.—There were only three cases of glanders certified in Birmingham last year. This shows a marked decrease compared with the 100 cases recorded in 1908 and 48 in 1907. Prior to 1908 the average number for many years ranged from 30 to 40. The increase in 1908 was owing to the better detection of latent cases made possible under the present efficient Order for dealing with the disease which came into force on January 1st, 1908, and the decrease in 1909 is the natural result of that.

Three cases recorded last year occurred in the last month of the year in a stud where glanders had existed 15 months previously, and where it was believed to be originally introduced by a horse from London. Whether these three cases had their origin in an undetected latent case from that outbreak, or were due to another glandered horse introduced from London, could not be clearly established. The fact is that one of the horses found affected had been previously suspected, but when tested gave a negative reaction, while another of the affected was a horse that had come from London in the meantime.

It is clear that the disease so far as Birmingham is concerned has been practically stamped out. But so long as glanders continues to exist in London and one or two other centres, so long will Birmingham be liable to receive a stray case of the disease; and this city is the more liable to this owing to the circumstances that the two Horse Repositories are two of the chief places for disposal of old horses in the Midlands.

The Board of Agriculture's returns of cases in Great Britain for the last four years are as follows:—

1906	2,012	...	1908	2,421
1907	1,934	...	1909	1,761

The increase in 1908 and decrease in 1909 is, as in Birmingham, the natural result of the present Order for dealing with the disease, and these returns show that real progress is at last being made in the country generally in eradicating it. Had all other centres to begin with more widely interpreted what is meant by "in contact horses" eradication would have been much nearer than it is. But even under existing conditions the date of eradication cannot now be very far off.

Anthrax.—In 1909 a considerable number of suspected cases were submitted for examination, but only two of these were found to be affected with the disease, the one being in a cow which died suddenly and which belonged to a city dairyman, the other being an infected skin removed from a cow dead of anthrax and sent into the city. In both cases measures were taken to prevent the spread of infection, and no subsequent case resulted from either. Anthrax.

Although so few cases have occurred in the city, anthrax continues to increase in the country, as will be seen from the Board of Agriculture's returns for the last three years:—

1907	1,466
1908	1,426
1909	1,700

The reason for this increase is difficult to satisfactorily explain. There is need for an exhaustive enquiry on the subject with a view to amending the existing regulations, so as to limit more effectually the spread of the disease.

Rabies.—The country still continues absolutely free from this disease. A number of dogs that had bitten people were submitted for examination, but although some of these showed evidence of a savage disposition, none presented any symptoms of rabies. Rabies.

Swine Fever.—Swine fever still continues very prevalent in the country, and a number of cases occurred here during the year. Most of the cases were in pigs sent to the market and intended for slaughter, but a few were in pigs being reared in the city. All the affected and in-contact pigs were slaughtered, and there is no evidence of further spread of the disease from any one of these. Swine fever.

Swine Erysipelas and Contagious Pneumonia.—A number of these cases continue to be met with, but on the whole the numbers appear to have decreased rather than increased. Swine erysipelas and pneumonia.

Parasitic Mange in Horses.—Parasitic mange has been rather prevalent in the city, 75 cases of this troublesome affection having been certified in 1909. Much good work has been done in preventing the spread of this disease since it was scheduled here as a contagious disease in 1908, and the disease is now far less prevalent than formerly. It is to be hoped that any neighbouring districts in which mange is not yet scheduled will soon be included in the scheduled areas, and thereby facilitate the eradication of the disease. Parasitic mange.

HOUSING OF THE WORKING CLASSES.

The passing of the Housing, Town Planning, etc., Act, 1909, during the year under review forms a turning-point in our work of bettering the housing conditions of the artisan classes. Until the passing of this Act all effort in this country had been directed to what may be called the sanitation of the house as distinguished from its surroundings. The new Act recognises that for urban populations, in addition to attending to the house itself, it is necessary to ensure that its surroundings are wholesome. Birmingham, like other large cities, has increased in size to such an extent that the peripheral zone locks in the central area, and prevents the occupants, particularly the children, from facilities for recreation to an extent that is detrimental, and is probably one of the causes in the production of the typical "town child." Town Planning Act.

Town Planning Act—*(continued).*

It is probable that the impetus which was given by the City of Birmingham to the country as a whole for some better means of controlling the development of our cities was the chief means of obtaining the Act above mentioned. Clearly the Act is a real contribution towards the important problem of healthy town development. There are many obvious omissions in that part of the Act relating to town planning, and possibly some difficulties may be encountered, as with other measures, which it may be found necessary to remedy when some experience has been obtained as to the working of the Act.

Housing of the working classes.

Part II. of the Housing of the Working Classes Act has been vigorously put in operation in Birmingham during the past seven years, and much good has resulted. Under this Act 4,789 houses have been represented as unfit for human habitation, an average of 684 per annum. Of these 2,234 have been rendered habitable, an average of 319 per annum.

The standard adopted has been a fair one in most respects. The houses are rendered dry by the insertion of damp-courses, the floors in the majority of cases are protected against ground damp, the walls are either entirely replastered or the plaster is so repaired that crevices where dirt and insects can lodge do not remain. The filth which accumulates between the floors and ceilings is removed, the woodwork of windows, doors, etc., is either renewed or thoroughly repaired, the drainage is attended to, the sanitary conveniences are reconstructed, and the air supply to the courtyard is improved where necessary by the removal of certain dwelling-houses or other buildings.

There are, however, certain requirements which, while insisted on by the Housing Committee, have not been insisted on in certain cases which came before the Petty Sessional Court. These are the provision of a water supply in the dwelling-house and the provision of a properly-ventilated food cupboard for each house. It seems somewhat remarkable that there should yet be a certain amount of public opinion against the provision of a water supply in each dwelling-house. To those actually engaged in public health work among the working classes, and who are familiar with the dirtiness inside the dwelling-house, there is unanimity of opinion that the provision of a water supply in the house for town dwellers is a great assistance in securing cleanliness of the people and their dwellings. It is very important that the general law should be altered in this respect, and it is to be hoped, pending such alteration, that local enactment will be obtained insisting on these very reasonable requirements in every cottage dwelling.

Housing of the working classes —*continued*.

Of the houses which were not repaired during the past seven years 1,403 were demolished. Many of these demolitions were due to the removal of dwellings in congested courtyards, so that light and air might be let into the courtyard. Other houses were demolished because it was found desirable to erect works on the site, while others were demolished because of their dangerous and insanitary condition. The average number of houses demolished during the seven years was 200 per annum.

The houses not accounted for by either being rendered habitable or by being demolished are, in the majority of cases, standing unoccupied and firmly closed, while a few have been converted into workshops or store-rooms.

The leasehold system of tenure, which maintains almost universally in Birmingham, while it produces special difficulties of its own, will, it is hoped, render the work of town planning, so far as the central areas in the City are concerned, relatively easy.

The following table shows the work done during each of the past seven years, and is followed by detailed lists of the properties dealt with during the year 1909 :—

Date.	Represented.		Rendered Habitable.		Demolished.		Closing Orders.		Demolition Notices.	
	Houses.	Properties.	Houses.	Properties	Houses.	Properties.	Houses.	Properties.	Houses.	Properties.
1903 ..	304	85	155	32	34	19	65	19	51	15
1904 ...	1119	143	242	37	127	33	233	31	36	6
1905 ...	793	98	330	38	230	43	327	41	61	7
1906 ...	596	87	370	49	117	26	199	25	143	13
1907 ...	806	120	262	41	422	64	679	102	157	24
1908 ...	650	79	494	69	257	43	184	24	164	30
1909 ...	521	70	381	54	216	45	220	34	54	9
Total ...	4789	682	2234	320	1403	273	1907	276	666	104

Houses unfit for habitation.

HOUSES REPRESENTED BY THE MEDICAL OFFICER OF HEALTH, 1909.

Property.	No. of Houses.
Ryder Street, 37...	1
Pritchett Street, 28 Court	5
Highgate Street, 28, etc., and 9 Court	12
Highgate Street, rear of 10	8
Lower Essex Street, 65 and 16 Court	3
Gooch Street, 3 Court	1
Bissell Street, rear of 103	6
Bissell Street, 7 Court	3
Bissell Street, 8 Court	5

Houses unfit for habitation—*(continued)*

Property.	No. of Houses.
Moseley Street, 16, 17, 18 and rear	8
Cheapside, 15 and 16 Courts	11
Darwin Street, 7 Court	8
Leopold Street, 74	1
Bellbarn Road, 53 Court	13
Witton Street, 60 to 67 and 8 Court	15
Blucher Street, 3 Court	5
Blucher Street, 2 Court	4
Windsor Street, 169 and rear	2
Windsor Street, 171 and 5 Court	9
Windsor Street, 177 and rear	2
Irving Street, 105 and rear	8
Graham Street, 3	1
Hockley Street, 1	1
Galton Street, 1 to 22	22
Cathcart Street, 35, etc.	3
Alma Crescent, 1 to 8	8
Icknield Square, 37, etc.	5
Holloway Head, 21 Court	3
Smithfield Passage, 37, etc.	4
Princip Street, 2	1
St. Martin's Street, 3 Court	2
St. Martin's Street, 4 Court	5
Upper Gough Street, rear of 48	4
Upper Gough Street, 1 Court	6
All Saints' Street, rear of 15	4
Allison Street, 1 Court	7
High Street, Bordesley, 127 and rear	3
High Street, Deritend, 35 Court	5
High Street, Deritend, 34 Court	7
High Street, Deritend, 33 Court	4
Alcester Street, 18 Court	6
Moseley Road, 12 and 14 and 8 Court	4
Moseley Road, 16 to 22 and 6 and 7 Courts	17
Moseley Road, 24 to 36 and 4 and 5 Courts	12
Moseley Street, 17 Court	10
Moseley Street, 18 Court	10
Moseley Street, 19 Court	8
Fox Street, 27	1
Hospital Street, 247 and rear	4
Cheapside, 98	1
Barford Street, 51 to 141 and rear	41
Pritchett Street, 3 Court	12
Watery Lane, 283	1
Brearley Street, 20 Court	6
Brearley Street, 2 Court	5
Highgate Street, 12 Court	4
Bishopsgate Street, 94, 98, etc.	18
Charles Henry Street, 26 and 27 Courts	10
Cecil Street, 13 Court	14
Bradford Street, 19 Court	4
Cheapside, 25 to 29 and 6 Court	10
Barford Street, 10 to 142	37
Cheapside, 11 Court	7
Cheapside, 12 and 13 Courts	13
Cheapside, 34 Court	10
Lombard Street, 14 Court	4
Bishopsgate Street, 5 Court	6
Love Lane, 2 Court	6
Oxygen Street, 1 to 10 and 1 Court	14
Lower Tower Street, 28	1
Total	521

HOUSES RENDERED HABITABLE, 1909

Houses rendered habitable.

Property.	No. of Houses.
Mosoley Road, rear of 56	13
Essington Street, 6 Court	5
Northumberland Street, Edward Place	9
St. Martin's Street, 6 Court	5
Spring Vale, 8 to 12 and rear	10
Bartholomew Street, 5 Court	8
Brearley Street, 8 Court	3
Spring Street, Springfield Terrace	9
Moseley Road, rear of 58	13
Coleman Street, rear of 40 and 43	15
Weaman Street, 14 Court	7
Darwin Street, 1 Court	18
Cooksey Road, rear of 310	8
Camp Hill, 167 to 170	4
Communication Row, 40, 41 and 7 Court	6
Cromwell Street, 57 Court	6
Richard Street, 69, 70, and 71 and rear	6
Ward Street, 12, etc., and 5 Court	26
Essington Street, 1 to 4 in 7 Court	4
Tower Street, rear of 37	5
Tower Street, rear of 90	5
Henry Street, 6 Court	2
Lennox Street, 4 Court	3
Gt. Francis Street, 18 Court	2
Benson Road, 35 and rear	4
Wharf Street, 24 and rear	11
Emily Street, 5 Court	7
Newtown Row, 36 Court	3
Sloane Street, 43, 44 and rear	15
Summer Lane, 53 Court	2
King Edward's Road, 5 Court	12
Steward Street, 21 Court	7
Green Street, 10 Court	5
St. Martin's Street, 3 Court	5
Devon Street, 2 Court	4
Pritchett Street, 80, 81, etc.	7
Adelaide Street, 9 Court	7
Dymoke Street, rear of 82	13
Ward Street, 2 Court	8
Darwin Street, 26 Court	3
Vittoria Street, rear of 97	5
Cheapside, 27 Court	4
Sheepcote Lane, 25	1
Alcester Street, 19 Court	5
Heathmill Lane, 11 Court	8
Hockley Street, 1	1
St. George's Street, 7 Court	6
Brearley Street, 7 Court	5
Hospital Street, 25 Court	9
Icknield Square, 37 to 40, etc.	5
Steward Street, 14 Court	2
New John Street, 8 Court	6
Newtown Row, 35 Court	7
Newtown Row, 206 etc., and Moorsom Street, 62, etc., and 14 Court	12
Total	381

Houses demolished.

HOUSES DEMOLISHED.

Property.	No. of Houses.
Coleshill Street, rear 94	4
Cheapside, 49, 50, and 51	3
St. Martin's Street, 6 Court	3
Lionel Street, 31 to 33	4
Ludgate Hill, 11 to 15	5
Darwin Street, 5 and 9	2
Brearley Street, 8 Court	1
Wenman Street, 14 Court	2
Tennant Street, 3 Court	2
Essington Street, 13, etc.	5
Hicks Square, 1	1
Nova Scotia Street, 14	1
Coleshill Street, rear 65	9
Sloane Street, 10 to 13 and rear	12
Shadwell Street, 6 Court	3
Henry Street, 6 Court	2
Gt. Francis Street, 18 Court	2
Macdonald Street, 4 Court	4
Lawley Street, 51 and rear	8
Chester Street, 10	1
Ward Street, 14 and 14 at rear	2
Cromwell Street, 206 and 5 and 7 at rear	3
New Canal Street, 9 Court	10
Hospital Street, 27 Court	5
Garrison Lane, 12 and 3 Courts	23
Watery Lane, 37 and 38 Courts	10
Curzon Street, 7 and 8 Courts	6
High Street, Deritend, 4 and 5 Courts	20
Leopold Street, 74	1
Icknield Street, 24 and rear	7
Hospital Street, 17 Court	7
Marshall Street, 3 Court	9
Tower Street, 30 Court	6
Gooch Street, 3 Court	1
Vauxhall Road, rear 97	1
Green Street, 10 Court	1
Bartholomew Street, rear 51	4
Aston Street, rear 18	1
Tower Street, 112 and rear	5
Communication Row, 42, 43 and rear	7
Tennant Street, 38, 39 and 43	3
Lower Dartmouth Street, 7 to 10	4
Woodcock Street, 1 and 2 and 1 at rear	3
St. George's Street, 23 and 1 at rear	2
Brearley Street, 1 in 7 Court	1
Total	216

Closing orders obtained.

CLOSING ORDERS OBTAINED.

Property.	No. of Houses
Sloane Street, 14 to 21 and rear	18
Sloane Street, 47 to 50	4
Brearley Street, 9 Court	4
Sherborne Street, 6 Court	6
Howard Street, rear 50	3
Steward Street, 13 and 1 and 2 at rear	3
Grosvenor Street West, 26 to 36 and rear	21
Spring Hill, 1 and 2, rear 24 and 26	2

Closing orders obtained—*continued*.

Witton Street, 60 to 67 and rear	15
Windsor Street, 30 and 34 and rear	10
Ryder Street, 37	1
Coleman Street, 22, 23, 24 and rear	6
Pritchett Street, 28 Court	5
Tower Street, 30 Court	11
Lawford Street, 24 and 4 at rear	2
Cheapside, rear 126	2
Sheepcote Lane, rear 25	5
Richard Street, 15, 16, 17 and 3 Court	5
St. Martin's Street, 4 Court	5
Alcester Street, 100 to 109, and 126 Darwin Street	11
Lower Essex Street, 16 Court	3
Blucher Street, 2 Court	4
Moseley Street, 16	5
Darwin Street, 3 Court	10
Holloway Head, 21 Court	3
Hospital Street, 26 Court	12
Inkerman Street, No. 134	1
Windsor Street, 169 to 177 and rear	13
Summer Lane, rear 291	3
High Street, Deritend, 33 Court	4
Hospital Street, 247, 249 and rear	4
Cheapside, 98	1
Darwin Street, 7 Court	8
Moseley Street, 17 Court	10
Total	220

DEMOLITION ORDERS SERVED.

Demolition orders served.

Property.	No. of Houses.
Cheapside, 313, 314, and 78 Rea Street	3
Steward Street, 5 to 9 and rear of 6	6
Camden Grove, rear of 18 and 7 Court	15
Marshall Street, 3 Court	9
Brearley Street, 11 Court	5
Sherborne Street, 6 Court	6
Lawford Street, 24 and rear	2
Spring Hill, rear of 24 and 26	2
Coleman Street, 22, 23, 24 and rear	6
Total	54

COMMON LODGING-HOUSES.

Common lodging-houses.

One common lodging-house was closed during the year, reducing the number of beds available from 2,502 in 1908 to 2,442 on December 31st, 1909. These figures do not include the accommodation at the Rowton House, or the accommodation in the large number of houses sub-let in lodgings. No new lodging-house was registered during the year. All the houses were regularly inspected.

The following statement shows the routine work done by the Inspector during each of the past three years :—

Common lodging houses —(*continued*).

	1907.	1908.	1909.
Visits paid by day	4,395	4,083	4,009
Visits paid by night	677	510	456
Windows not thrown open	8	6	18
Floors requiring cleansing	35	8	23
Bed-clothes requiring cleansing	618	209	69
Bed-clothes to be provided	612	443	156
Means of ventilation provided	19	137	67
Repairs to walls, floors, roofs and windows	93	235	75
Wash-basins provided	27	34	0
Sinks provided or repaired	5	12	4
Water-closets provided	19	27	2
Water-closets repaired	46	59	37
Ash tubs provided	6	14	7
Drains repaired	17	24	8
Yards paved	0	0	0
Fire Buckets provided	33	59	12
Fire Escapes provided	4	5	1

HOUSES SUB-LET IN LODGINGS.

Houses let in lodgings.

These extremely unsatisfactory houses have been regularly visited during the year. There were 539 on the register, as compared with 511 in 1908, 430 in 1907, and 360 in 1906. The total accommodation in the houses on the register in 1909 was for 2,942 persons, as against 2,788 persons in the previous year. During the year 2,950 visits were paid during the daytime to these houses.

New bye-laws were passed for the regulation of these houses during the year under review, which follow strictly the lines of the model bye-laws suggested by the Local Government Board.

If additional local legislation is ever applied for in Birmingham, it is very desirable that some provision should be obtained to prevent the sub-letting of houses in lodgings, as at present, without water supply, proper cooking apparatus, etc. They are generally kept in a dirty and neglected condition, are largely inhabited by the waifs and strays of society, and are generally extremely difficult to deal with.

CANAL BOATS.

Canal Boats.

The following is a copy of the report sent to the Local Government Board on the work done in connection with Canal Boats:—

"REPORT OF INSPECTOR OF CANAL BOATS, 1909.

"Health Department,
"Council House, Birmingham,
"6th January, 1910.

"To the Chairman and Members of the Health Committee.

"Gentlemen,

"In compliance with Section 3 of the Canal Boats Act, 1884, I present to you the Annual Report of the work accomplished under the Canal Boats Acts, 1877 and 1884, and the Regulations of the Local Government Board made thereunder, for the year ending 31st December, 1909.

"Inspector William Lee Wilson continued as Inspector under the above Acts until his decease on 5th July, 1909. Inspector William G. E. Childs was appointed as his successor on 15th July, 1909. Inspector Childs combines in his work certain duties connected with the attendance at school of canal-boat children; and in addition to the work under the above Acts he also acts as Inspector of Houses let in lodgings in Birmingham. He is paid at the rate of £96 4s. per annum, with uniform and cycle allowance, and his office is at the Council House.

"The smaller number of boats examined in 1909 is accounted for by the fact that during the period between the late Inspector's falling ill and the definite appointment of his successor there was considerable diminution in the number of boats boarded.

"Seven hundred and thirty-eight boats, registered to carry 2,416 adults, were inspected during the year. The distribution of these inspections among the four quarters of the year is shown as follows:—

1st quarter	277	inspections.
2nd "	92	"
3rd "	142	"
4th "	227	"

"The following table gives the corresponding numbers since 1904:—

Year.	No. of Boats inspected.	No. of Adults Boats are registered to carry.
1904	1182	... 4022
1905	925	... 2979
1906	1059	... 3507½
1907	1047	... 3348
1908	1080	... 3554½
1909	738	... 2416

Canal boats—(continued).

"The actual numbers carried in the boats inspected during 1909 were 1,135 men, 412 women, and 491 children, making a total of 2,038 persons—equivalent to 1,792½ adults.

"Of the 738 boats inspected, 673, or 91·2 per cent., were found to be in compliance with the Acts and Regulations. But in regard to 65 boats contraventions existed, and notices were served on the owners. On 52 of these boats one contravention existed in each, on eleven boats two contraventions in each, and on two boats three contraventions in each. The total number of infringements found was therefore 80, and these may be classified as under:—

	Brought forward from 1908 to be dealt with.	No. found during 1909.	Notices complied with during 1909.	Carried forward to be dealt with in 1910.
Registration	—	6	5	1
Notification of change of master	—	—	—	—
Certificates	2	5	7	—
Marking	2	7	8	1
Overcrowding	—	7	7	—
Separation of the sexes	—	2	2	—
Cleanliness	—	—	—	—
Ventilation	—	—	—	—
Painting	—	28	21	7
Repairing	—	10	7	3
Using Fly-boat as ordinary	—	2	2	—
Provision of Water Cask	—	13	11	2
Removal of Bilge Water	—	—	—	—
Notification of Infectious Disease ...	—	—	—	—
Admittance of Inspector	—	—	—	—
	4	80	70	14

"Legal proceedings were instituted against one boat-owner in respect of failure to provide a proper water-vessel in each of three boats. At his appearance at Court he gave an undertaking to have the necessary work done, and upon this being completed to our satisfaction the summonses were withdrawn on payment of costs.

"The custom of sending letters to owners drawing attention to the requirements of the notices unfulfilled has been continued with satisfactory results. In most cases compliance was readily made.

"No case of infectious disease occurred during the year.

Canal boats—(continued)

"The number of boats on the register on 31st December, 1909, was 397, compared with 396 at the end of 1908. The corresponding figures at the end of 1909, 1908, 1907, 1906, and 1905 respectively were 397, 396, 391, 394, and 383.

"It is not possible to give an exact figure for the number of boats in use or available. On 8th October, 1909, his Majesty's Inspector of Canal Boats sent us a list of the boats registered in Birmingham which had been reported from all parts of the country as inspected since 1st January, 1908. This list contained the numbers of 260 boats, and to this have to be added four more which have since been registered, making a total of 264 boats. But this number (264) can only be taken as an approximate figure of available boats, for the following reason. In May, 1909, letters were sent to owners of canal boats still on the Birmingham register, and not seen during 1908, asking for information as to the condition and whereabouts of each boat. Amongst the 195 definite replies received there were three boats occurring in the Inspector's list which were reported to be 'broken up years ago,' and also 18 boats not included in the list which were reported to be in good working order.

"There have been six new boats registered in Birmingham in 1909, as opposed to five registrations cancelled, making a net increase of one. There have been no registrations on account of structural alterations in boats previously registered.

"Nothing has yet been done to improve the lot of canal-boat children, who still pass through the school period without practically any education. The general surroundings under which many of these children live is a distinctly bad one. Both of these subjects were dealt with at length in the report of my predecessor issued in 1905.

"Your obedient servant,

"T. SHADICK HIGGINS,

"Assistant Medical Officer of Health."

MILK SUPPLY.

Milk supply

The following report has been made by Mr. Malcolm, the Veterinary Superintendent, upon the work done in regard to the inspection of Cowsheds and the examination of milk for tubercle infection:—

Milk supply—(*continued*).

"*The Milk Supply.*—Birmingham receives its milk supply partly from herds kept within the City area, but mainly from outside. In the former we have powers of inspection of cows and sheds not accorded in the latter, where we have only power to endeavour under restrictive conditions to trace cows suspected of causing tubercle infection in milk, and, when these are found, to interdict them from the dairy herd. It is to be hoped that the enactment of the Local Government Milk and Dairies Bill and the Board of Agriculture's Tuberculosis Order will not be long deferred. The powers they are designed to give are much required.

Inspection of cows and cowsheds.

"*Inspection of City Dairy Herds.*—The inspection of the city herds has been continued on the same lines as in former years. There has been a monthly veterinary inspection of cows and cowsheds and periodic examination of mixed and unmixed milk samples. The cows have been found mostly clean and healthy, and in particular their udders have been unusually free from eruptive or other diseased conditions. The cowsheds have been kept, on the whole, in a clean and sanitary condition, this in several instances being much facilitated by alterations recently effected in the standings and gutters.

"There have been in all 691 visits to cowsheds, and reckoning each cow examined at such visits an inspection, 6,267 cows have been individually examined, and in no case has tuberculosis of the udder been detected.

"This general freedom from tuberculosis of the udder in city cows has been corroborated by the fact that in none of the milk samples taken has tubercle bacilli been found. This desirable result may be partly ascribed to the regular practice followed by city cowkeepers in buying only comparatively young healthy-looking cows, guaranteed to have sound udders, and selling them out fat within the year, and partly to the systematic inspection in force, which generally secures the voluntary casting at once from the herds of any cow showing evidence of advanced tuberculosis.

Tubercle infection in milk.

"*Efforts to Eliminate Tubercle Infection from the General Milk Supply.*—There are two methods now in operation with this object in view. The one, inaugurated last year in a number of herds, is effectual: it is to free the herds from tuberculosis. The other, which has been in operation some years, is to trace the infecting cow in a herd and remove her: this can only minimise the degree of infection, never eliminate it, since it is only after infection has been found in the milk that any attempt is made to trace the infecting cow. This procedure procures the

elimination of detected sources of infection, and affords convincing evidence of its extent, but it can never eradicate the disease. Tubercle infection in milk—*(continued).*

"In connection with this procedure 106 samples of mixed milk were taken from churns at the railway stations, etc., and were submitted to bacteriological examination. Of these, eight, or 7·54 per cent., were found to contain living tubercle bacilli (the percentage last year was 13·72).

"The incriminated farms were visited and the dairy herds inspected. As a result six cows affected with tuberculosis of the udder were removed from the herds, and were subsequently slaughtered by order of their owners. In these cases the tuberculous lesions of the udder found on post-mortem verified the accuracy of the previous diagnosis. Occasionally there is considerable difficulty in securing the slaughter of such animals and in seeing the post-mortem. This will be manifest when it is remembered that under existing regulations we possess no powers for compulsory slaughter or compensation, and that cows known to be affected with tuberculosis of the udder may be sold publicly or privately several times before being slaughtered.

"*Freeing Herds from Tuberculosis.*—The commencement made last year to endeavour to eradicate tuberculosis from a number of herds in the district with a view to providing a supply of tubercle-free milk from tubercle-free cows available for hospital use, nursery milk, and other purposes has been proceeded with. Freeing herds from tuberculosis.

"In connection with this the Health Committee submitted a scheme to the Council in their report of July 27th, 1909. This scheme the Council approved. The scheme provides for paying the veterinary expenses incurred by dairy farmers who wish to eradicate tuberculosis from their herds, provided they comply with certain approved conditions.

"To begin with, it was decided to limit the scheme to herds within ten miles of the City, whose milk is sold here. With a view to bringing its provisions and its benefits directly before those immediately concerned, all dairy farmers within the prescribed radius were circularised on the matter.

"As a sequel to this, 20 dairymen applied to have their herds tested under the scheme. In 16 instances the request

Freeing herds from tuberculosis—*(continued)*.

was complied with, and in four declined. The reason for refusal in one case was that the farm was outside the prescribed area: in another, that the sheds did not comply with the necessary requirements (in this case the sheds have since been modified, and the scheme of eradication is now in operation), and in the remaining two that the milk was not being sold in Birmingham.

"As a result of the measures adopted in these 16 herds, eight of them have been freed from tuberculosis, five are being freed; but in the remaining three the procedure has been suspended, the farmers having declined to proceed further with the matter at present, owing to the high percentage of cows found infected at the first test. The eight herds that have been freed are being maintained free, only tubercle-free cows being purchased. Of the five herds that are being freed good progress has been made with four, and in these the prospect of a successful issue is promising. In these cases the reacters have been separated from the non-reacters, and are being disposed of as speedily as trade circumstances and financial expediency permit. As far as possible only non-reacting cows are purchased to replace them. In the other case the progress has not been encouraging, the owner having unintentionally bought a number of cows most of which when tested proved to be reacters.

"Altogether 803 cows were tested, of which 567 were found free and 236, or 29·38 per cent., reacters. The table opposite shows the result of testing the herds referred to:—

"As provided for under the scheme, the testing of these herds is being mostly done by the farmer's own veterinary surgeon in collaboration with the Corporation Veterinary Staff. The veterinary cost of testing in addition to the regular expense of the Corporation Veterinary Staff has been £67 15s. 5d.

"The success of this movement must now largely depend upon the public's support. There is evidence that, provided the milk consumers are prepared to pay a slight increase in price for tubercle-free milk from tubercle-free cows, the farmers and dairymen are prepared to supply such milk. But if dairymen cannot get any better price for such milk than for ordinary milk from untested cows, they can scarcely be expected to continue the trouble and expense involved by the scheme.

SUMMARY OF COWS TESTED, JANUARY 1st to DECEMBER 31st, 1909.

Applications received to test herds.	Applications accepted and herds tested	Applications declined.	Herds freed.	Herds being freed.	Procedure suspended.	No. of Cows tested.	No. of Cows free.	No. of Cows affected.	No. of Cows showing a doubtful reaction.
1	1	...	...	1	...	158	100	44	14
1	1	...	1	...	...	42	38	4	...
1	1	...	1	...	...	11	7	4	...
1	1	...	...	1	...	76	41	33	2
1	1	...	1	...	...	10	10	...	...
1	1	...	...	1	...	102	73	24	5
1	1	...	...	...	1	7	1	6	...
1	1	...	...	...	1	21	17	4	...
1	1	...	1	...	...	34	34	...	...
1	1	...	1	...	...	65	55	10	...
1	1	...	...	...	1	25	8	15	2
1	1	...	1	...	...	19	17	2	...
1	1	...	1	...	...	112	92	16	4
1	1	...	1	...	...	48	44	4	...
1	1	...	...	1	...	37	18	19	...
1	1	...	...	1	...	36	12	24	...
1	...	1	...	...	...	...	...	...	...
1	...	1	...	...	...	...	...	...	...
1	...	1	...	...	...	...	...	...	...
1	...	1	...	...	...	...	...	...	...
20	16	4	8	5	3	803	567	209	27
								236	

Freeing herds from tuberculosis—*(continued)*.

Freeing herds from tuberculosis—*(continued).*

"An objection to tested cows has been raised by some people who assert that proportionately more good milkers are reacters than is the case with indifferent milkers. At first sight there appears to be some foundation for the statement. But this apparent anomaly admits of easy explanation. Needless to say, tuberculosis does not increase a cow's milking faculty, nor are good milkers more susceptible to tuberculosis than others. The matter is chiefly a question of the cow's age coupled with opportunity for infection. Cows are mostly at their best that have had three or four calves, and many such cows have, therefore, been three or four years housed in association with cows with advanced tuberculosis, in cowsheds, which by lack of ventilation, favour the propagation of the disease.

"On the other hand the indifferent milkers are mostly young cows that have only had either one or two calves, and have consequently been exposed for a shorter period to cowshed infection."

MILKSHOPS.

Milkshops.

The work done by the inspector of milkshops during the past three years is set out in the table below :—

	1907	1908	1909
Dairies on the register	13	12	12
Milkshops on the register	2461	2582	2681
Purveyors on the register	425	506	516
Dairies registered during the year ...	0	0	0
Milkshops registered	588	612	678
Purveyors registered	71	88	100
Dairy certificates cancelled	1	1	0
Milkshops ,, ,, ...	506	491	579
Purveyors ,, ,, ...	0	7	90
Visits to dairies	44	32	39
Visits to milk shops and milk stores ...	4137	3443	3479
Dirty vessels found at milk shops and milk stores	29	22	9
Shops, cellars, and pantries whitewashed	150	77	87
Lamp oil, fish, tripe and vinegar businesses prohibited	15	5	1
Dirty churns found at railway stations ...	2	1	2
Cases of infectious disease reported at milkshops	42	31	39

INSPECTION OF MEAT, FISH, FRUIT, ETC.

Slaughterhouses

The inspection of food, together with that of slaughterhouses and places where food is prepared for sale, is a duty referred by the City Council to the Markets and Fairs Committee, and as such is under the supervision of the Superintendent of Markets. The statistical information given in the following paragraphs has been supplied by the Superintendent of Markets. It appears from his figures that there were 11,484 visits paid during the year to slaughterhouses, as compared with 10,850 during 1908, and 9,460 in 1907.

Bad meat, fish and fruit.

The number of seizures of unsound meat or fish during the year was 20, against 31 in 1908, 27 in 1907, 123 in 1906, and 21 in 1905. Four prosecutions were instituted in the City on account of exposure for sale of bad food, as compared with five in 1908, and five in 1907.

As will be seen from the following tabular statement the quantity of meat and other foods surrendered is far in excess of that seized. Each inspector has an instruction to refer to the Medical Officer of Health any food which he thinks is unfit for human consumption, in cases of doubt, or when a seizure is made, and during the year under review many such cases arose.

BAD MEAT.	1907	1908	1909
Voluntarily surrendered ...	3109 lots.	3659 lots.	3937 lots.
Seized by Inspectors	18 lots.	19 lots.	14 lots.
Weight destroyed	290 tons.	303 tons.	352 tons.
Persons prosecuted	3	5	3
Penalties inflicted	£8	£14	£40

BAD FISH.			
Voluntarily surrendered ...	1387 lots.	1519 lots.	1460 lots.
Seized	9 lots.	12 lots.	6 lots.
Weight destroyed	89 tons.	141 tons.	103 tons.
Persons prosecuted	2	0	1
Penalties inflicted	£5	£0	£0 10s. 0d.

BAD FRUIT.			
Weight destroyed	15 tons.	24 tons.	15 tons.

Bad meat, fish and fruit—*(continued).*

As by far the most important object in meat and food inspection is to ensure that what is exposed for sale shall be wholesome and nutritious for the human subject, the condition of the premises and the degree of cleanliness is of the utmost importance, but the standards in this respect are certainly insufficient.

FACTORIES AND WORKSHOPS.

Factories and workshops.

The statistical information drawn up in the following tables is on the lines required by the Home Office.

The chief outstanding feature in Birmingham workshops is the generally dirty condition under which they are kept. This is probably no worse than in the majority of other districts in England, but when compared with well-kept Continental workshops our conditions are distinctly bad. As has been said in previous reports, the workshop should be kept approximately as clean as the dwelling-house in which the worker lives. In the large majority of cases a worker spends about as much time in the workshop as in his dwelling-house, but it is seldom that a workshop is washed or that the benches and other parts of the workshops are properly cleaned. The worker himself neglects the ordinary cleanliness in his workshop in a way which he would not dream of doing at his home, *e.g.*, spitting on the floor. There is a large amount of evidence that workshops, here as elsewhere, play a considerable part in the dissemination of tuberculosis and other diseases, and until it is recognised that cleanliness is as essential in the workshop as in the home, it is probable that there will be a high mortality among workshop employees, particularly in certain trades. The fact that about five males die in Birmingham from phthisis for every two females between the ages of 15 and 55 years is probably mainly due to the influence of workshops in the spread of this disease.

It is still possible to employ workpeople in underground workshops and factories. In addition, there are many offices in the City which are either wholly underground or underground to such an extent as to make them rooms that ought not to be inhabited. It is most desirable that such underground premises should be done away with entirely as workplaces, as they undoubtedly have a pernicious influence on the health of those employed. A good many of the bakers' premises in the City are old, and are not kept in a sufficiently clean condition; indeed, in this group of workshops, as in many others, English ideals of cleanliness are not sufficient to meet the sanitary needs of the workpeople.

I.—INSPECTION OF FACTORIES, WORKSHOPS, AND WORKPLACES,

Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

PREMISES. (1)	Number of		
	Inspections. (2)	Written Notices. (3)	Prosecutions. (4)
Factories (including Factory Laundries)...	836	27	—
Workshops (including Workshop Laundries)	7126	287	1
Workplaces (other than Outworkers' premises included in Part 3 of this report)	746	3	—
Total	8708	317	1
Revisits paid ...	3628	—	—

II —DEFECTS FOUND IN FACTORIES, WORKSHOPS AND WORKPLACES.

PARTICULARS. (1)	Number of Defects			No. of Prosecutions. (5)
	Found. (2)	Remedied. (3)	Referred to H.M.I. (4)	
Nuisances under the Public Health Acts:—				
Want of cleanliness	1477	1461	—	—
Want of ventilation	43	38	—	—
Overcrowding	9	9	—	—
Want of drainage of floors ...	11	10	—	1
Other nuisances	834	819	—	—
Sanitary accommodation—				
Insufficient	63	60	—	—
Unsuitable or defective ...	912	899	—	—
Not separate for sexes ...	52	50	—	—
Offences under the Factory and Workshop Act:—				
Illegal occupation of underground bakehouse (s. 101)	—	—	—	—
Breach of special sanitary requirements for bakehouses (ss. 97 to 100)	—	—	—	—
Other offences (excluding offences relating to outwork which are included in Part 3 of this report)	—	—	—	—
Total	3401	3346	—	1

III.—HOME WORK.

NATURE OF WORK.	OUTWORKERS' LISTS, SECTION 107.											Inspection of Outworkers' Premises	OUTWORK IN UNWHOLESOME PREMISES, Section 108.			OUTWORK IN INFECTED PREMISES. Section 109, 110.		
	Lists received from Employers.						Addresses of Outworkers.		Notices served on Occupiers as to keeping or sending lists.	Prosecutions.								
	Sending twice in the year.			Sending once in the year.														
	Lists.	Outworkers.		Lists.	Outworkers.		Received from other Councils.	Forwarded to other Councils.		Failing to keep or permit inspection of lists.	Failing to send lists.		Instances.	Notices served.	Prosecutions.	Instances.	Orders made (S. 110)	Prosecutions (Sections 109, 110).
		Contractors.	Workmen.		Contractors.	Workmen.												
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Wearing Apparel —																		
(1) making, etc.	356	931	1477	27	36	57	59	325	...	..	1	...	4	4	...	...	...	...
(2) cleaning & washing...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...
Lace, lace curtains & nets	...	...	...	...	...	..	...	...	...	...	...	..	...	...	...	...	...	...
Artificial flowers	...	...	...	...	...		...	...	...	...	..	...	...	...	..	...	...	...
Nets, other than wire nets	...	...	...	...	...	...	..		...	..	...	...	...	...	...	...	...	...
Tents	...	..	...	...	...	...	.	...	...	...	..	...	...	...	...	...	...	...
Sacks	...	...	...	...	...	...	...	..	...	..	...	.	...	...	...	...	...	
Furniture and upholstery	4	34	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fur pulling	...	..	...	...	...	..	...	...	...	...	...	...	...	...	...	...	..	...
Feather sorting	..	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...
Umbrellas, etc.	...	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...
Carding,&c.,of buttons,&c.	50	32	1843	4	...	69	60	266	...	...	...	...	...	...	...	...	...	..
Paper bags and boxes ...	38	...	296	7	...	29	...	34	..	.	...	...	...	.	...	...	...	..
Basket making	...	...	...	...	...	..	...	...	...	...	...	.	...	..	.	...	...	...
Brush making	12	...	185	2	..	9	...	31	...	...	...	...	...	...	...	...	...	..
Racquet and tennis balls	..	..	...	...	..	..	..	...	.	.	...	...	...	...	...	..	...	...
Stuffed toys	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	.
File making	2	...	6	...	...	..	...	...	...	...	...	...	...	.	..	...	...	...
Electro-plate	18	142	18	19	94	48	5	12	.	...	...	...	...	...	...	...	...	...
Cables and chains... ..	...	...	..	...	...	...	...	...	..	...		..	...	...	...	...	...	..
Anchors and grapnels ...	...	...	...	..	...	...	...	...	...	..	..	..	.	...	...	...	...	..
Cart gear	...	...	...	...		...	...	...	..	...	...	...	...	..	...	..	..	...
Locks, latches and keys...	...	...	...	...		...	...	...	...	...	...	...	...	..	..	...	...	...
Pea picking	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...
							.	..	..	.	...	...	...	..	...	...	...	...
Total	480	1139	3836	59	130	212	124	668	284	...	1	2047	4	4	...	...	..	...

IV.—REGISTERED WORKSHOPS.

Factories and workshops—*(continued).*

	Number.
Workshops on the Register (s. 131) at the end of the year	6344

V.—OTHER MATTERS.

		Number.
Matters notified to H.M. Inspector of Factories—		
Failure to affix Abstract of the Factory and Workshop Act (s. 133)		26
Action taken in matters referred to H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (s. 5)	Notified by H.M. Inspector	210
	Reports (of action taken) sent to H.M.	195
Other		—
Underground Bakehouses (s. 101)—		
Certificates granted during the year		—
In use at the end of the year		13

BLACK SMOKE.

Smoke nuisances.

The observations made during the year in regard to emissions of black smoke are set out in the statistical table below, which in addition to showing the number of observations also show the number of cases reported to the Health Committee and dealt with during the year :—

	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
No. of observations ..	9358	15808	13445	16705	13186	10034	8229	7934	7125	9216
Average number of minutes of black smoke per observation	1·95	1·34	1·26	1·27	1·39	1·95	2·27	2·29	2·17	2·24
Offences reported ..	125	116	139	151	231	250	251	275	243	247
Cautionary letters sent.	89	80	89	71	117	128	116	119	108	80
Police Court proceedings	35	35	50	80	98	109	115	116	111	94
Total amount of fines ..	£24/10/0	£15/2/6	£33 15/0	£49/7/6	£77/10/0	£69/10/0	£82/15/0	£89/0/0	£66/12/6	£67/15/0
Total amount of costs	£14/6/0	£14/4/0	£19/8/6	£36/15/6	£37/17/6	£41/0/0	£41/19/6	£41/0/8	£38/12/6	£33/6/0
Average fine	14/0	8/7	13/6	13/2	15/10	16/2	17/1	18/11	14/6	17/7

SANITARY WORK.

Sanitary Work.

Certain of the work done by the inspectors is indicated in Table XI., on page 136. One of the most important pieces of work done by the staff is that of dealing with the remaining pan privies. For a considerable number of years pan privies have been converted into water-closets at a rate of between 2,000 and 3,500 per annum. On December 31st last there were remaining in the City about 7,000 pan privies, a good many of which are dilapidated and insanitary, and require to be dealt with. The effect of these conversions has been reported in previous years in gradually reducing the number of typhoid fever cases occurring in the City, from an average of over 500 per annum to less than 100 in 1909.

HEALTH VISITORS' WORK.

Health Visitors Work.

Part of the work done by the Health Visitors is set out in Table XI. In addition to systematic house inspection and to visits in connection with the rearing of infants, they spend a very considerable proportion of their time in making enquiry into ailments of school children, with a view to either excluding the children from school or getting them to resume attendance. This part of the work is not recorded in the tabular statement.

Another important matter dealt with by the Health Visitors is the cleansing of dwelling-houses and of the bodies and clothing of many school children who are sent to school in a verminous and dirty condition. This is a very important aspect of their work, and one that it is hoped will receive more attention in future than at present, as there is no excuse for children or adults endangering in this direction the comfort of clean people. The number of houses visited on account of children who were reported to be in a verminous condition was last year upwards of 3,000.

APPENDIX.

TABLE I.—VITAL STATISTICS OF WHOLE DISTRICT DURING 1909 AND PREVIOUS YEARS.

Year.	Population estimated to middle of each year.	Births.		Deaths Under 1 year of Age.		Total Deaths Registered at all Ages.		Total Deaths in Public Institutions in the District.	Deaths of Non-residents registered in the District.	Deaths of Residents registered beyond the District.	Nett Deaths at all Ages belonging to the District.	
		Number.	Rate.*	Number.	Rate per 1,000 Births registered.	Number.	Rate.*				Number.	Rate.*
1	2	3	4	5	6	7	8	9	10	11	12	13
1899	514,956	17,609	34·3	3,398	193	10,446	20·3	1,614	247	325	10,524	20·5
1900	519,610	16,941	32·7	3,366	199	10,756	20·8	1,911	267	393	10,882	21·0
1901	523,284	16,735	32·1	3,150	188	10,357	19·8	1,802	302	347	10,402	19·9
1902	528,181	†17,103	31·9	†2,681	157	†9,577	17·8	†2,082	†312	†407	†9,672	18·0
1903	533,039	16,866	31·7	2,668	158	9,056	17·0	1,916	321	388	9,123	17·2
1904	537,965	16,902	31·5	3,302	195	10,235	19·1	2,008	332	437	10,340	19·3
1905	542,959	15,795	29·2	2,451	155	8,588	15·9	1,838	362	492	8,718	16·1
1906	548,022	16,016	29·3	2,686	168	9,067	16·6	1,923	380	485	9,172	16·8
1907	553,155	15,619	28·3	2,300	147	8,744	15·8	2,054	397	532	8,879	16·1
1908	558,357	†16,141	28·4	†2,339	145	†8,855	15·6	†2,205	†401	†538	†8,992	15·9
Averages for years 1899-1908	535,953	16,573	30·9	2,834	170	9,568	17·9	1,935	332	434	9,670	18·1
1909	563,629	14,985	26·7	2,030	135	8,583	15·3	2,086	433	541	8,691	15·5

* Rates in columns 4, 8, and 13 calculated per 1,000 of estimated population. † 53 weeks.

Area of District in acres, 12,639. Total population at all ages at Census of 1901 522,204.
Number of inhabitated houses ,, ,, 107,831.
Average number of persons per house at Census of 1901, 4·8.

TABLE II.—VITAL STATISTICS OF SEPARATE LOCALITIES IN 1909 AND PREVIOUS YEARS.

Year.	Population estimated to the middle of each year.	Deaths at all ages.	Death-rate per 1,000.	Population estimated to the middle of each year.	Deaths at all ages.	Death-rate per 1,000.	Population estimated to the middle of each year.	Deaths at all ages.	Death-rate per 1,000.	Population estimated to the middle of each year.	Deaths at all ages.	Death-rate per 1,000.	Population estimated to the middle of each year.	Deaths at all ages.	Death-rate per 1,000.	Population estimated to the middle of each year.	Deaths at all ages.	Death-rate per 1,000
Wards	Rotton Park.			All Saints'.			Ladywood.			St. Paul's.			St. George's.			St. Stephen's.		
1900	43,339	773	17·8	42,251	828	19·6	25,177	484	19·2	17,025	346	20·4	20,473	539	26·3	23,385	615	26·3
1901	46,835	752	16·1	41,444	725	17·5	25,089	502	20·0	14,954	338	22·6	20,230	469	23·2	23,765	633	26·6
1902	46,088	677	14·4	41,834	659	15·5	25,128	444	17·3	15,552	289	18·2	20,434	449	21·6	23,720	640	26·5
1903	46,887	650	13·9	42,101	662	15·7	25,253	448	17·8	15,561	299	19·2	20,412	425	20·8	23,768	499	21·0
1904	47,658	821	17·2	43,033	769	17·9	25,284	509	20·1	15,669	336	21·5	20,425	439	21·5	23,615	582	24·7
1905	48,530	680	14·0	42,232	618	14·6	24,842	413	16·6	15,543	244	15·7	20,350	383	18·8	23,284	465	20·0
1906	49,393	668	13·5	42,513	726	17·1	24,704	419	17·0	15,088	280	18·6	20,451	405	19·8	23,035	540	23·4
1907	50,788	676	13·3	43,959	618	14·1	24,815	390	15·7	14,483	247	17·1	20,080	388	19·3	23,275	494	21·2
1908	50,618	645	12·7	43,575	681	15·6	24,802	394	15·9	14,112	252	17·9	19,452	430	22·1	22,432	517	23·1
1909	49,421	656	13·3	43,257	611	14·1	24,253	410	16·9	13,249	237	17·9	18,741	386	20·6	22,024	512	23·2
Wards	St. Mary's.			St. Bartholomew's.			Market Hall.			St. Thomas'.			St. Martin's.			Edgb. & Harborne.		
1900	15,570	475	30·4	27,003	749	27·7	10,858	234	21·5	19,057	399	20·9	24,143	527	21·9	30,718	441	14·4
1901	15,904	472	29·7	26,857	696	25·9	9,807	171	17·4	19,215	402	20·9	23,950	485	20·3	30,795	402	13·1
1902	15,993	405	24·8	26,876	678	24·6	9,570	165	16·9	18,586	381	20·1	24,097	499	20·3	31,200	390	12·3
1903	16,248	375	23·1	26,572	647	24·4	9,483	154	16·3	18,559	347	18·7	24,019	404	16·8	31,311	380	12·1
1904	15,859	382	24·1	25,801	741	28·7	9,163	162	17·7	18,764	338	18·0	24,469	461	18·8	31,287	399	12·7
1905	15,551	325	20·9	24,762	571	23·1	9,049	154	17·0	18,563	315	17·0	24,662	395	16·0	31,002	345	11·1
1906	13,891	316	22·8	24,666	570	23·1	9,451	152	16·1	18,088	376	20·8	23,928	422	17·6	32,781	382	11·7
1907	13,386	287	21·4	23,043	543	23·6	8,930	153	17·1	17,361	317	18·3	24,116	396	16·4	33,215	394	11·9
1908	11,929	309	25·9	22,759	542	23·8	8,815	141	16·0	17,439	310	17·8	23,450	375	16·0	32,89	362	11·0
1909	12,357	312	25·2	22,039	513	23·3	8,774	128	14·6	17,252	322	18·7	22,702	381	16·8	33,104	361	10 9
Wards	Deritend.			Bordesley.			Duddeston.			Nechells.			Balsall Heath.			Saltley.		
1900	24,771	645	26·0	53,770	851	15·8	24,274	569	23·4	33,701	739	21·9	38,579	619	16·0	40,829	681	16·7
1901	24,704	550	22.3	54,686	843	15·4	23,921	555	23·2	33,624	760	22·6	38,827	582	15·0	42,250	741	17·6
1902	24,516	507	20·3	55,606	761	13·4	23,773	517	21·3	33,384	636	18·7	39,025	589	14·8	44,185	679	15·1
1903	24,077	517	21·5	56,825	758	13·3	23,541	463	19·7	33,710	570	16·9	39,359	531	13·5	45,427	714	15·7
1904	24,157	532	22·0	55,596	843	15·2	23,451	538	22·9	33,346	765	22·9	40,140	595	14·8	46,761	784	16·8
1905	23,723	489	20·6	58,464	782	13·4	23,395	469	20·1	32,827	588	17·9	40,412	517	12·8	47,318	641	13·5
1906	23,770	537	22·6	59,818	800	13·4	22,926	428	18·7	33,696	672	19·9	40,956	505	12·3	50,796	683	13·4
1907	23,180	493	21·3	61,032	791	12·9	23,049	478	20·7	32,314	662	20·5	40,269	548	13·6	53,524	694	13·0
1908	22,746	473	20·8	62,018	778	12·5	22,174	461	20·8	32,741	673	20·6	40,260	550	13·7	53,914	732	13·6
1909	21,863	443	20·3	62,004	737	11·9	21,701	441	20·3	32,218	619	19·2	40,274	564	14·0	55,562	684	12·3

Note.—The inmates of large Institutions are not included in the Ward populations, and the deaths amongst them have been referred, as far as possible, to the Wards in which the deceased persons had previously resided.

TABLE III.

Cases of Infectious Disease Notified during the Year 1909, classified according to ages, wards, and institutions.

Disease.	Ages.													Wards.																		Institutions.	City.
	Under 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 to 75.	75 to 85.	85 and up.	Rotton Park.	All Saints'.	Ladywood.	St. Paul's.	St. George's.	St. Stephen's.	St. Mary's.	St. Bartholomew's.	Market Hal	St. Thomas'.	St. Martin's.	Edgbaston and Harborne.	Deritend.	Bordesley.	Duddeston.	Nechells.	Balsall Heath.	Saltley.		
Smallpox	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...
Scarlet Fever ...	29	794	1236	496	123	79	90	22	1	1	...	...	...	206	325	46	66	148	169	62	113	17	40	79	162	112	361	91	213	164	431	66	2871
Diphtheria...	13	191	216	96	52	43	50	21	2	2	1	...	...	63	54	25	21	25	32	17	35	12	15	39	23	37	72	31	42	46	66	32	687
Typhus Fever ...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Typhoid Fever ..	..	2	11	14	17	14	18	12	6	..	1	...	..	4	6	3	3	5	7	2	6	2	4	6	5	4	9	...	7	6	11	5	95
Continued Fever..	..	..	..	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Relapsing Fever .	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever	...	...	...	...	1	6	16	3	...	..	...	...	..	3	...	2	...	...	3	...	...	...	...	...	...	4	3	1	7	3	...	...	26
Cholera	...		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	. .	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas	15	28	21	27	33	24	69	86	89	59	37	18	1	28	45	17	14	21	25	12	27	5	14	15	16	24	50	34	58	33	52	17	507
Totals .	57	1015	1484	633	226	166	243	144	98	62	39	18	1	304	430	93	104	199	236	93	181	36	73	139	206	181	495	157	327	252	560	120	1186

TABLE IV.

Deaths Registered in or Belonging to the City of Birmingham during the Year ending January 1st, 1910.

DISEASES.	AGES.													All Ages.		
	0—	1—	5—	10—	15—	20—	25—	35—	45—	55—	65—	75—	85—	Males.	Females.	Persons.
Smallpox—																
(*a*) Vaccinated	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(*b*) Unvaccinated	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..
(*c*) No Statement	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Measles	108	387	32	..	..	..	..	..	..	..	..	..	..	254	273	527
Scarlet Fever	4	64	30	4	4	..	..	..	..	..	..	..	..	50	56	106
Typhus Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Epidemic Influenza	1	3	1	..	..	4	12	16	7	18	20	6	2	46	44	90
Whooping Cough	54	94	3	..	..	..	..	..	1	..	..	..	..	64	88	152
Diphtheria, Membranous Croup	4	48	24	7	.	2	1	1	1	1	..	..	..	41	48	89
Enteric Fever	..	..	..	2	3	3	7	5	2	..	..	..	..	13	9	22
Asiatic Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhœa, Dysentery	109	35	..	1	..	.	..	..	2	..	1	1	..	85	64	149
Epidemic Enteritis	74	21	..	..	..	..	..	..	..	..	..	..	..	49	46	95
Epid. Cerebro Spinal Meningitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Varicella	..	2	1	..	..	..	..	..	..	..	..	..	..	..	3	3
Epidemic Rose-rash	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mumps	..	2	..	..	..	..	..	..	..	..	..	..	..	2	..	2
Hydrophobia	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..
Glanders, Farcy	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..
Tetanus	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..	..
Anthrax, Splenic Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cowpox, Acc. of Vaccination	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Syphilis	25	2	..	..	..	..	1	1	2	2	..	1	..	17	17	34
Gonorrhœa	..	..	..	..	..	..	..	..	..	1	1	..	..	2	..	2
Phagedæna	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Erysipelas	6	1	1	..	..	..	1	6	2	2	3	3	..	13	12	25
Puerperal Fever	..	..	..	..	1	2	9	3	..	..	..	..	..	..	15	15
Pyæmia, Septicæmia	7	3	..	1	..	..	3	3	2	2	..	..	..	10	11	21
Infective Endocarditis	..	..	1	..	2	3	..	2	..	..	..	..	..	5	3	8
Cancrum Oris	..	2	..	..	..	..	..	..	..	..	..	..	..	1	1	2
Stomatitis	6	1	..	..	..	..	..	..	..	..	..	..	..	5	2	7
Carbuncle	..	..	..	..	1	..	..	.	..	..	..	..	..	1	..	1
Cellulitis	1	1	..	..	1	2	..	1	1	2	2	..	..	7	4	11
Malarial Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.
Rheumatic Fever	..	1	4	3	3	1	5	1	9	1	1	..	..	18	11	29
Rheumatism of Heart	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	1
Tuberculosis of Brain	14	30	1	2	2	..	1	1	..	..	..	..	..	25	26	51
Tuberculosis of Larynx	..	..	..	..	..	..	1	..	2	3	..	..	..	5	1	6
Phthisis	3	16	12	10	36	65	189	202	118	82	16	2	..	472	279	751
Abdominal Tuberculosis	13	20	8	1	1	..	..	3	1	1	..	..	..	32	16	48
General Tuberculosis	10	10	4	1	3	1	1	3	3	1	..	..	..	19	18	37
Other forms of Tuberculosis	..	2	2	3	2	2	4	3	1	..	2	..	..	12	9	21
Thrush	4	..	..	..	..	..	..		..	..	..	..	..	2	2	4
Actinomycosis	..	.	..	.	1	..	..	..	..	..	..	..	..	1	..	1
Hydatid Diseases	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scurvy	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Ptomaine Poisoning	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Acute Alcoholism	..	1	..	..	..	..	..	2	..	..	..	..	..	2	1	3
Chronic Alcoholism	..	..	..	..	..	1	1	7	2	3	1	1	..	10	6	16
Lead Poisoning	..	..	..	..	..	..	2	2	..	1	..	..	..	4	1	5
Osteo-arthritis Rheumatoid-arthritis	..	..	2	1	..	..	..	2	3	7	3	3	..	6	15	21
Gout	..	..	..	..	..	..	..	1	..	1	2	4	..	7	1	8
Cancer	..	..	1	..	1	3	14	46	86	123	109	37	4	170	254	424
Diabetes Mellitus	..	..	..	..	1	2	4	3	9	5	6	2	..	15	17	32
Purpura Hæmorrhagica	1	..	..	1	..	..	2	..	1	1	..	..	..	2	4	6
Hæmophilia	1	..	..	..	..	..	..	..	..	..	..	..	..	1	.	1
Anæmia, Leucocythæmia	..	2	2	1	..	..	2	2	7	2	2	.	..	7	13	20
Lymphadenoma, Hodgkin's Dis.	..	..	1	..	..	..	..	2	2	..	..	..	..	3	2	5
Premature Birth	318	..	..	..	..	..	..	..	..	..	..	..	..	183	135	318
Injury at Birth	11	..	..	..	..	..	..	..	..	..	..	..	.	5	6	11
Debility at Birth	178	1	..	..	..	..	..	..	..	..		..	..	105	74	179
Atelectasis	57	..	..	..	..	..	..	..	..	..	..	..	..	35	22	57

TABLE IV.—*continued.*

DEATHS REGISTERED IN OR BELONGING TO THE CITY OF BIRMINGHAM DURING THE YEAR ENDING JANUARY 1ST, 1910.

DISEASES.	AGES.													All Ages.		
	0—	1—	5—	10—	15—	20—	25—	35—	45—	55—	65—	75—	85—	Males.	Females.	Persons.
Congenital Defects	51	9	1	2	..	..	..	..	..	..	..	..	..	33	30	63
Want of Breast Milk	19	1	..	..	..	..	..	..	..	..	..	..	..	15	5	20
Atrophy, Debility, Marasmus	213	36	1	..	..	..	..	..	..	..	..	..	..	139	111	250
Dentition	19	11	..	.	..	..	..	..	..	..	..	..	..	17	13	30
Rickets	4	10		..	..	..	..	..	..	..	..	.	..	6	8	14
Old Age, Senile Decay	..	..	..	..	..	..	..	..	..	6	147	219	69	181	260	441
Convulsions	79	22	1	..	..	..	..	..	1	..	..	..	..	59	44	103
Meningitis	48	51	19	4	3	..	1	2	2	1	1	..	..	64	68	132
Encephalitis	..	1	..	1	1	..	..	..	..	..	..	..	..	2	1	3
Apoplexy	..	..	..	..	..	..	2	3	8	12	18	8	..	19	32	51
Softening of Brain	..	..	..	..	..	..	.	..	1	6	19	12	4	18	24	42
Hemiplegia	..	..	..	..	..	1	1	2	4	10	16	15	..	27	22	49
General Paralysis of Insane	..	..	..	..	..	..	2	15	13	..	2	1	1	28	6	34
Other forms of Insanity	..	..	..	..	1	..	..	..	2	7	13	4	..	19	8	27
Chorea	..	..	1	..	..	..	..	..	..	..	..	..	..	.	1	1
Cerebral Tumour	..	..	..	1	1	1	5	3	3	..	1	..	.	6	9	15
Epilepsy	..	..	3	1	4	2	6	11	5	4	2	2	..	20	20	40
Laryngismus Stridulus	1	1	..	..	..	..	..	..	..	..	..	..	..	1	1	2
Locomotor Ataxy	..	..	..	..	..	1	1	2	3	2	..	..	..	4	5	9
Paraplegia, Diseases of Cord	1	1	1	..	..	2	3	7	7	14	9	3	1	34	15	49
Cerebral Congestion	.	..	..	..	..	..	1	2	.	1	3	1	..	4	4	8
Cerebral Effusion	..	..	..	..	1	..	1	..	..	..	..	..	..	1	1	2
Cerebro-Spinal Meningitis	2	1	..	..	..	..	..	..	..	..	..	..	..	.	3	3
Neuritis	..	..	..	..	..	..	..	7	2	2	..	..	..	..	11	11
Other Diseases of Brain or Nerves	..	..	..	..	1	..	..	..	2	4	..	1	.	5	3	8
Otitis, Mastoid Disease	5	3	2	5	3	2	..	..	..	..	1	.	..	12	9	21
Disease of Nose, Epistaxis	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..	..
Diseases of Eye	..	1	..	..	..	..	..	..	..	..	.	..	..	..	1	1
Pericarditis	..	1	2	..	1	..	..	.	1	..	1	..	..	1	5	6
Endocarditis, Valvular Disease	..	2	5	9	13	4	8	26	29	31	43	10	..	88	92	180
Hypertrophy of Heart	..	..	..	..	.	.	..	..	..	..	..	..	..	.	..	..
Angina Pectoris	..	..	..	..	..	..	..	..	..	2	2	3	..	3	4	7
Aneurism	..	..	..	..	..	..	..	1	7	2	1	..	..	10	1	11
Senile Gangrene	..	..	..	..	..	..	..	..	..	3	13	13	2	15	16	31
Embolism, Thrombosis	1	..	..	..	1	1	2	6	16	16	14	5	1	30	33	63
Phlebitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..
Varicose Veins	..	..	..	..	..	..	..	2	..	..	..	..	..	..	2	2
Cardiac Dilatation	..	..	..	..	1	..	..	2	2	1	5	5	..	10	6	16
Heart Disease (not defined)	9	4	5	2	5	2	11	36	87	95	102	47	2	187	220	407
Other Diseases of Heart	..	..	..	..	1	..	2	3	9	16	18	8	..	26	31	57
Atheroma	..	..	..	..	..	..	..	..	..	1	5	2	..	4	4	8
Arterio-sclerosis	..	..	..	..	..	..	..	1	2	6	3	5	1	17	4	21
Cerebral Hæmorrhage	2	..	..	..	..	1	2	13	37	52	60	36	4	95	112	207
Other Diseases of Blood Vessels	..	..	..	..	..	1	..	..	2	1	1	..	..	3	2	5
Laryngitis	2	10	..	..	..	..	..	.	..	..	1	..	1	9	5	14
Croup	1	1	..	..	..	..	..	..	..	..	..	..	..	1	1	2
Acute Bronchitis	151	78	1	1	2	..	2	6	11	16	14	9	3	162	132	294
Chronic Bronchitis	6	2	5	2	3	2	6	28	73	145	226	104	29	296	335	631
Lobar Pneumonia	8	24	2	1	5	6	29	18	29	16	13	3	2	87	69	156
Lobular Pneumonia	119	155	10	..	2	..	3	4	8	20	30	9	3	187	176	363
Pneumonia (not defined)	30	59	13	3	5	4	18	23	27	24	39	10	..	146	100	246
Emphysema, Asthma	..	..	..	..	..	..	..	2	1	3	3	..	..	6	3	9
Pleurisy	.	7	..	..	..	..	3	2	3	1	4	3	..	13	10	23
Fibroid Phthisis	..	..	..	..	..	..	1	..	2	6	2	1	..	9	3	12
Bronchiectasis	..	1	..	..	..	1	..	1	2	4	..	..	..	8	1	9
Other Dis. Respiratory System	..	1	..	..	..	..	1	2	1	1	..	..	..	5	1	6
Quinsy	..	1	..	..	..	..	..	..	..	1	..	..	..	1	1	2
Diseases of Pharynx	..	..	.	..	..	..	..	..	..	..	..	..	..	.	..	.
Diseases of Œsophagus	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	1
Ulcer of Stomach and Duodenum	..	..	..	..	..	1	8	6	4	6	2	.	.	16	11	27
Other Diseases of Stomach	41	4	1	.	.	..	1	6	3	11	2	.	..	37	32	69
Enteritis	99	29	3	1	..	..	1	1	9	11	13	5	1	85	88	173
Appendicitis	..	2	6	9	4	1	4	5	1	3	1	..	..	24	12	36
Obstruction of Intestine	10	3	2	1	1	1	1	3	6	10	12	4	2	30	26	56
Other Diseases of Intestine	..	..		..	..	..	1	..		1	..	1	..	3	..	3
Cirrhosis of Liver	.	.	.	1	..	..	3	12	17	17	8	2	..	27	33	60
Other Diseases of Liver	2	2		.	..	..	..	5	4	4	3	4	..	12	12	24
Peritonitis	..	2	2	.	1	..	1	5	3	2	1	.	..	5	12	17
Other Dis. of Digestive System	3	..	..	..	..	..	.	1	2	3	..	..	..	6	3	9

TABLE IV.—*continued.*

Deaths Registered in or Belonging to the City of Birmingham during the Year ending January 1st, 1910.

DISEASES.	AGES.													All Ages.		
	0—	1—	5—	10—	15—	20—	25—	35—	45—	55—	65—	75—	85—	Males	Females.	Persons.
Diseases, Lymphatic System and Ductless Glands ..	..	2	1	1	.	1	1	..	2	2	2	2	1	4	11	15
Acute Nephritis	2	4	1	2	1	1	9	9	20	10	10	5	..	37	37	74
Bright's Disease	..	2	2	..	2	..	8	10	25	23	14	3	..	51	38	89
Calculus	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diseases of Bladder and Prostate	..	..	..	..	..		..	..	3	5	8	2	..	16	2	18
Other Diseases, Urinary System	..	..	..	..	..	..	1	1	1	1	1	..	..	2	3	5
Diseases of Testis and Penis ..	.	..	..	..	.		..	1	..	..	1	.	..	2	.	2
Diseases of Ovaries	..		..	..	..	..	1	1	1	..	..	..	..	..	3	3
Diseases of Uterus and Appendages	..	..	..		..	1	1	1	2	1	1	..	..	..	7	7
Diseases of Vagina and External Genitals	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diseases of Breast	..	..		..	..	..	..	..	..	..	..	..	..	..	..	..
Abortion, Miscarriage	..	..	..	..	..	..	2	1	..	..	..	..	..	..	3	3
Puerperal Mania	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
Puerperal Convulsions	..	..	..	..	..	2	2	2	.	..	..	..	..	..	6	6
Placenta Prævia, Flooding.. ..	..	..	..	..	..	..	6	3	..	..	..	..	..	..	9	9
Puerperal Thrombosis..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	2	2
"Parturition"	..	..	..	..	.	..	1	1	..	..	..	..	..	..	2	2
Other Diseases, Pregnancy and Childbirth	..	..	.	..	..	..	1	2	..	..	..	..	..	..	3	3
Arthritis, Ostitis, Periostitis ..	2	1	1	1	..	..	..	..	1	1	1	1	..	6	3	9
Other Diseases, Osseous System	1	1	..	2	..	..	1	..	..	..	..	..	..	5	..	5
Ulcer, Bedsore	..	..	..	..	..	..	..	..	1	..	..	1	..	1	1	2
Eczema	2	..	..	..	..	1	..	..	..	..	1	1	..	4	1	5
Pemphigus	11	..	..	..	..	1	..	..	..	..	..	..	..	6	6	12
Other Diseases, Integumentary System	2	1	..	..	..	..	..	..	1	..	..	..	..	3	1	4
By Accidents or Negligence:																
In Mines and Quarries..	..	..	..	..	..	..	..	1	.	..	..	..	..	1	..	1
In Vehicular Traffic	..	5	2	3	..	1	1	2	3	2	..	2	..	15	6	21
On Railways	..	..	..	1	.	..	2	..	2	2	..	1	..	7	1	8
On Ships, Boats, &c.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
In Building Operations .. .	..	..	..	..	..	1	..		..	..	..	..	..	1	..	1
By Machinery..	..	..	..	..	..	..	1	2	1	..	..	..	..	4	..	4
By Weapons and Implements ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Burns and Scalds	7	39	5	1	1	..	..	1	3	2	1	..	..	30	30	60
Poisons, Poisonous Vapours ..	..	1	..	..	..	..	..	..	..	..	1	..	..	1	1	2
Surgical Narcosis	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	1
Effects of Electric Shock	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Corrosion by Chemicals	..	..	..	..		..	..	..	..	..	..	..	..	..	..	..
Drowning	..	..	7	1	1	1	1	2	4	2	1	..	..	14	6	20
Suffocation, Overlaid in Bed ..	56	2	..	..	..	..	..	..	..	..	..	..	..	28	30	58
,, Otherwise	5	1	..	..	..	..	..	..	..	1	..	..	..	2	5	7
Falls not specified	1	..	..	3	..	..	3	8	6	7	8	7	3	19	27	46
Weather Agencies..		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Otherwise, not stated	5	..	..	1	..	..	1	1	..	2	1	3	..	9	5	14
Homicide	..	..	1	..	..	..	..	..	1	..	..	..	..	1	1	2
Suicides:																
By Poison..	..	..	..	..	..	..	1	4	2	2	..	..	..	5	4	9
By Asphyxia	..	..	..	..	..	1	..	1	..	..	..	..	..	2	..	2
By Hanging and Strangulation..	..	..	..	..	..	..	..	1	4	3	1	..	..	8	1	9
By Drowning	..	..	..	..	..	..	2	..	1	2	1	..	..	5	1	6
By Shooting	..	..	..	..	..	..		3	..	..	..	..	..	2	1	3
By Cut or Stab	..	..	..	..	..	..	..	7	3	3	1	..	..	13	1	14
By Precipitation from Elevated Places	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	1
By Crushing	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1
By other and Unspecified Methods	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Execution	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sudden Death, cause not ascertained	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ill-defined & Unspecified Causes	1	..	..	..	1	2	3	1	3	3	3	..	..	8	9	17
Totals	2030	1345	236	98	128	138	443	659	806	934	1092	646	136	4501	4190	8691

TABLE V.

Births and Deaths Registered in, or Belonging to, each Ward during the Year ending January 1st, 1910.

CAUSES OF DEATH.	WARDS.																			
	Rotton Park.	All Saints'.	Ladywood.	St. Paul's.	St. George's.	St. Stephen's.	St. Mary's.	St. Bartholomew's.	Market Hall.	St. Thomas'.	St. Martin's.	Edgbaston & Harborne.	Deritend.	Bordesley.	Duddeston.	Nechells.	Balsall Heath.	Saltley.	Not located.	City.
Smallpox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Measles	30	27	21	17	44	56	28	42	8	12	28	14	30	23	22	38	38	37	12	527
Scarlet Fever	8	11	2	1	4	7	6	7	2	2	2	4	5	12	7	9	4	13	..	106
Typhus Fever	..	..	..	..	..	..	..	..	..		..	..	.	..	..	..	..	..	..	..
Epidemic Influenza	11	10	7	1	2	3	1	1	1	1	1	8	4	11	1	9	5	9	4	90
Whooping Cough	10	14	9	5	3	15	1	9	3	5	3	2	13	6	19	18	5	12		152
Diphtheria, Memb. Croup	9	4	3	2	3	3	3	8	2	2	8	4	2	7	6	7	7	9	..	89
Croup	..	1	..	..	..	1	..	..	..	..	.	.	..	..	..	..	..	..	..	2
Enteric Fever	2	..	1	..	..	..	1	1	1	1	..	1	1	4	..	3	1	4	1	22
Asiatic Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhœa, Dysentery	10	7	11	6	9	14	5	3	2	8	11	1	10	10	9	10	4	13	6	149
Epidem. or Zymotic Enteritis	2	7	1	10	12	10	4	8	..	4	1	..	6	6	2	16	2	4	..	95
Enteritis	12	15	11	4	6	13	11	10	..	6	5	6	5	10	11	18	9	14	7	173
Other Continued Fevers	..	1	..	..	..	..	..	2	..	..	..	..	..	..	1	1	..	..	..	5
Erysipelas	3	..	1	..	2	1	1	1	..	2	1	..	..	2	2	4	1	2	2	25
Puerperal Fever	..	..	1	..	1	2	..	..	..	..	..	..	2	3	1	2	2	1	..	15
Other Septic Diseases	3	6	4	2	1	1	3	2	2	1	3	3	1	4	..	3	4	3	4	50
Intermittent Fever and Malarial Cachexia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tuberculosis of Meninges	7	5	1	2	1	1	..	3	1	2	1	..	2	4	3	5	6	5	2	51
Tuberculosis of Lungs	59	50	34	20	39	41	38	45	10	30	33	22	41	73	28	48	49	67	24	751
Abdominal Tuberculosis	3	7	1	5	..	1	..	2	1	2	..	4	1	3	4	4	..	8	2	48
Other forms of Tuberculosis	3	5	6	1	2	3	5	5	1	..	..	6	6	7	2	3	3	5	1	64
Alcoholism	2	1	1	..	..	..	..	1	..	..	2	2	1	2	1	3	2	..	1	19
Cancer	37	28	19	12	11	14	14	24	7	18	18	23	19	45	15	18	50	28	24	424
Premature Birth	18	33	12	10	18	24	6	23	4	16	13	19	21	19	10	20	18	33	1	318
Congenital Defects	27	18	10	9	11	28	7	11	1	13	8	10	8	32	21	25	21	35	15	310
Developmental Diseases	25	19	15	10	22	34	15	19	3	9	13	6	21	21	17	20	17	18	10	314
Old Age	39	27	20	8	8	17	9	17	5	9	20	24	28	38	33	30	41	29	39	441
Meningitis	13	5	7	4	7	4	5	15	1	5	3	4	7	9	6	9	10	17	1	132
Convulsions	7	7	3	2	9	6	3	8	1	8	5	2	3	8	8	8	3	12		103
Diseases of Heart	53	50	31	13	17	41	25	32	12	23	23	40	39	75	37	32	59	48	23	673
Cerebral Hæmorrhage	21	17	13	4	8	4	6	11	6	8	11	10	15	20	6	8	12	18	9	207
Bronchitis	67	76	40	32	48	49	37	65	14	40	51	39	51	60	38	65	39	68	46	925
Pneumonia	52	43	41	19	36	41	24	49	14	45	32	28	28	64	52	68	33	67	29	765
Diseases of Stomach	5	4	1	2	2	9	16	2	2	..	5	9	6	14	9	13	3	5	2	96
Obstruction of Intestines	8	7	2	1	1	1	1	2	1	..	1	4	1	6	4	5	5	4	1	56
Cirrhosis of Liver	3	4	6	1	2	2	2	7	2	1	4	4	1	7	5	2	4	2	1	60
Nephritis and Bright's Dis.	12	12	7	5	9	4	7	6	3	9	9	12	7	18	3	11	14	9	6	163
Tumours and other Affections of Female Genital Organs	..	1	..	..	..	..	1	1	..	..	1	..	1	3	1	..	1	..	..	10
Accidents and Diseases of Parturition	3	1	2	1	..	..	..	..	1	1	..	1	..	3	5	6	..	1	..	25
Accidents or Negligence	19	17	12	7	6	13	14	16	1	11	14	9	26	21	10	16	12	16	6	243
Suicides	1	1	1	2	2	3	..	4	3	1	5	3	2	3	1	3	5	3	2	45
Ill-defined Causes	..	3	..	..	..	1	1	1	1	..	1	..	..	..	1	1	1	3	3	17
All other Causes	72	67	53	19	40	45	21	49	12	27	45	44	29	84	40	58	74	62	90	931
Total Deaths	656	611	410	237	386	512	312	513	128	322	381	361	443	737	441	619	564	684	374	8691
Deaths under One Year	151	141	91	57	114	163	75	124	20	85	85	60	104	147	117	175	107	169	45	2030
Births	1300	1269	712	313	686	772	361	798	144	540	581	609	735	1559	701	1111	979	1574	241	14985

TABLE VI.

Deaths, under 1 year, Registered in, or belonging to, each Ward during the Year ending January 1st, 1910.

CAUSES OF DEATH.	WARDS.																			
	Rotton Park.	All Saints'.	Ladywood.	St. Paul's.	St. George's.	St. Stephen's.	St. Mary's.	St. Bartholomew's.	Market Hall.	St. Thomas'.	St. Martin's.	Edgbaston & Harborne.	Deritend.	Bordesley.	Duddeston.	Nechells.	Balsall Heath	Saltley.	Not located.	City.
Smallpox	.	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..
Measles	7	4	6	3	13	14	6	7	2	2	6	2	7	1	4	5	11	8	..	108
Scarlet Fever	..	..	..	.	..	..	..	1	..	1	..	..	..	2		..	..	..	..	4
Epidemic Influenza	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	1	..	1
Whooping Cough	5	5	1	3	1	5	..	3	..	2	1	1	3	3	9	6	4	2	..	54
Diphtheria Memb Croup	..	1	..	..	..	..	..	..	1	..	..	..	..	1	..	1	..	..	..	4
Croup	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Enteric Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhœa, Dysentery	9	3	8	2	9	8	5	2	2	5	10	1	9	8	8	6	3	9	2	109
Epidem. or Zymotic Enteritis	2	5	1	7	12	9	4	7	..	3	..	..	2	4	1	14	..	3	..	74
Enteritis	6	6	8	3	2	5	7	7	..	4	2	2	4	9	8	8	4	12	2	99
Other continued Fevers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Erysipelas	..	..	..	..	..	..	..	1	..	2	..	..	..	..	..	2	..	1	..	6
Other Septic Diseases	1	3	2	1	..	..	1	..	1	..	..	..	..	1	..	1	2	..	1	14
Tuberculosis of Meninges	4	..	1	..	1	1	..	1	..	..	..	..	..	..	1	1	2	2	..	14
Tuberculosis of Lungs	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Abdominal Tuberculosis	1	2	..	1	..	..	..	..	1	2	..	..	..	1	3	..	..	1	1	12
Other Forms of Tuberculosis	1	..	2	..	..	..	..	1	..	..	..	..	..	2	1	2	..	1	..	10
Cancer	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Premature Birth	18	33	12	10	18	24	6	23	4	16	13	19	21	19	10	20	18	33	1	318
Congenital Defects	27	18	9	8	9	27	6	11	1	12	7	10	7	31	21	25	21	32	15	297
Developmental Diseases	20	17	11	9	18	31	11	18	1	8	12	4	17	17	10	17	14	11	9	255
Meningitis	8	2	5	1	1	2	..	7	..	3	3	1	1	2	1	3	3	5	..	48
Convulsions	6	3	1	2	7	5	3	7	1	7	3	1	3	6	6	5	3	10	..	79
Diseases of Heart	2	2	..	1	..	2	1	..	..	..	..	..	..	..	..	..	1	..	..	9
Cerebral Hæmorrhage	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	.	..	..	2
Bronchitis	14	8	7	2	9	7	4	13	1	5	8	8	9	12	11	17	7	11	4	157
Pneumonia	9	11	8	2	10	8	6	8	3	9	5	4	6	10	13	19	8	15	3	157
Diseases of Stomach	..	1	..	..	..	3	7	1	2	..	3	..	4	4	4	9	..	2	1	41
Obstruction of Intestines	1	..	..	..	..	..	..	1	..	..	..	1	..	1	1	2	1	2	..	10
Nephritis and Bright's Dis.	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	2
Accidents or Negligence	4	6	4	1	..	7	5	3	..	2	6	2	10	8	4	4	2	5	1	74
Ill-defined Causes	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	.	..	1	1
All other Causes	5	10	4	1	3	3	3	2	..	2	6	4	1	4	1	7	3	3	4	66
Total Deaths	151	141	91	57	114	163	75	124	20	85	85	60	104	147	117	175	107	169	45	2030

TABLE VII.—COMPARISON OF PREVALENCE OF SICKNESS AND DEATH FROM INFECTIOUS DISEASES.

(Rates calculated per 1,000 persons on the population estimated to the middle of each year.)

Year.	Smallpox.		Scarlet Fever.		Diphtheria, Membranous Croup.		Typhus Fever.		Typhoid Fever.		Puerperal Fever.		Erysipelas.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
*1891	0·11	0·02	3·42	0·21	0·48	?	...	...	0·93	0·18	0·03	0·01	0·86	0·03
1892	0·06	...	2·94	0·14	1·10	0·21	...	...	0·54	0·08	0·08	0·05	1·18	0·07
1893	2·01	0·14	3·31	0·14	0·79	0·17	0·01	...	1·00	0·19	0·11	0·08	1·75	0·05
1894	4·22	0·35	3·64	0·15	0·83	0·18	...	...	1·04	0·21	0·09	0·04	1·57	0·03
1895	0·20	0·02	6·00	0·27	1·50	0·43	...	...	0·88	0·17	0·05	0·03	1·65	0·04
1896	0·03	0·01	6·65	0·32	2·35	0·58	...	...	0·95	0·21	0·06	0·04	1·54	0·04
1897	...	...	3·81	0·19	1·41	0·32	0·00	0·00	1·06	0·18	0·03	0·02	1·16	0·04
1898	...	...	2·60	0·09	1·36	0·26	...	...	1·25	0·22	0·05	0·03	1·25	0·03
1899	...	...	2·44	0·06	1·40	0·29	...	...	1·52	0·23	0·06	0·03	1·23	0·04
1900	0·00	...	3·98	0·18	1·05	0·15	...	...	1·64	0·35	0·08	0·05	1·31	0·05
1901	...	...	6·35	0·29	1·02	0·16	...	...	1·18	0·21	0·06	0·05	1·39	0·04
1902	0·13	0·01	9·39	0·55	1·47	0·24	...	...	1·01	0·19	0·07	0·04	1·42	0·06
1903	0·47	0·02	5·33	0·27	1·66	0·25	...	...	0·65	0·12	0·06	0·04	1·21	0·04
1904	0·01	...	3·09	0·12	1·17	0·21	...	...	0·46	0·07	0·07	0·05	1·11	0·05
1905	0·07	0·00	3·11	0·10	1·29	0·18	...	...	0·39	0·07	0·07	0·04	1·10	0·06
1906	...	...	3·32	0·10	1·50	0·17	...	...	0·35	0·07	0·05	0·03	1·08	0·04
1907	...	...	4·58	0·17	1·84	0·18	...	...	0·45	0·09	0·09	0·05	1·08	0·03
1908	...	...	4·01	0·14	1·40	0·18	...	...	0·34	0·09	0·03	0·01	0·84	0·02
1909	...	...	5·11	0·19	1·22	0·16	...	...	0·17	0·04	0·05	0·03	0·92	0·04

* Prior to enlargement of City.

TABLE VIII.

NUMBER OF CASES REPORTED UNDER THE INFECTIOUS DISEASE (NOTIFICATION) ACT, 1889, DURING EACH WEEK OF THE YEAR 1909.

Week. Number.	Week. Date of ending.	Smallpox.	Scarlet Fever.	Diphtheria.	Typhus Fever.	Typhoid Fever.	Simple Continued Fever.	Relapsing Fever.	Puerperal Fever.	Cholera.	Erysipelas.	Total.
	1909.											
1	January 9th	...	43	19	...	2	...	...	...	...	12	76
2	,, 16th	...	44	19	...	2	...	...	1	...	5	71
3	,, 23rd	...	78	16	...	3	...	...	...	...	22	119
4	,, 30th	...	53	18	...	...	...	...	2	...	13	86
5	February 6th	...	63	14	...	5	...	...	...	...	14	96
6	,, 13th	...	54	20	...	3	...	...	...	...	8	85
7	,, 20th	...	35	20	...	1	...	...	...	...	9	65
8	,, 27th	...	34	18	...	1	...	...	1	...	14	68
9	March 6th	...	32	16	...	3	...	...	...	...	5	56
10	,, 13th	...	19	17	...	1	...	...	...	...	5	42
11	,, 20th	...	28	22	...	...	...	...	...	...	12	62
12	,, 27th	...	25	11	...	...	...	...	1	...	7	44
13	April 3rd	...	30	8	...	2	...	...	...	...	9	49
14	,, 10th	...	46	9	...	...	...	...	...	...	8	63
15	,, 17th	...	33	11	...	...	...	...	2	...	3	49
16	,, 24th	...	42	13	...	2	...	...	1	...	17	75
17	May 1st	...	36	11	...	1	...	...	...	...	13	61
18	,, 8th	...	24	13	...	5	...	...	...	...	7	49
19	,, 15th	...	37	13	...	2	...	...	1	...	6	59
20	,, 22nd	...	34	14	...	2	...	...	...	...	5	55
21	,, 29th	...	55	17	...	1	...	...	1	...	9	83
22	June 5th	...	43	11	...	...	...	...	1	...	9	64
23	,, 12th	...	41	10	...	1	...	...	1	...	10	63
24	,, 19th	...	56	10	...	1	...	...	1	...	6	74
25	,, 26th	...	63	12	...	1	...	...	...	...	11	87
26	July 3rd	...	47	9	...	2	...	...	2	...	7	67
27	,, 10th	...	48	12	...	2	...	...	...	...	5	67
28	,, 17th	...	66	10	...	1	...	...	...	...	10	87
29	,, 24th	...	62	11	...	1	...	...	...	...	11	85
30	,, 31st	...	55	10	...	1	...	...	1	...	6	73
31	August 7th	...	65	4	...	1	...	...	1	...	7	78
32	,, 14th	...	67	16	...	2	...	...	...	...	7	92
33	,, 21st	...	43	17	...	2	...	...	...	...	8	70
34	,, 28th	...	63	14	...	1	...	...	...	...	3	81
35	September 4th	...	73	7	...	2	...	...	1	...	11	94
36	,, 11th	...	79	10	...	5	...	...	...	...	13	107
37	,, 18th	...	85	9	...	4	...	...	...	...	7	105
38	,, 25th	...	95	22	...	3	...	...	1	...	9	130
39	October 2nd	...	85	12	...	...	...	...	1	...	9	107
40	,, 9th	...	85	9	...	4	...	...	...	...	4	102
41	,, 16th	...	68	14	...	1	...	...	...	...	16	99
42	,, 23rd	...	99	17	...	3	...	...	1	...	11	131
43	,, 30th	...	67	22	...	3	...	...	1	...	13	106
44	November 6th	...	98	16	...	2	...	...	...	...	14	130
45	,, 13th	...	74	13	...	1	...	...	...	...	7	95
46	,, 20th	...	78	12	...	2	...	...	...	...	18	110
47	,, 27th	...	60	15	...	3	...	...	2	...	11	91
48	December 4th	...	61	9	...	2	...	...	1	...	9	82
49	,, 11th	...	51	10	...	4	...	...	...	...	17	82
50	,, 18th	...	44	8	...	3	...	...	1	...	14	70
51	,, 25th	...	44	5	...	...	...	...	...	...	7	56
52	1910.											
	January 1st	...	61	12	...	1	...	...	...	...	14	88
	TOTALS ...	...	2871	687	...	95	...	...	26	...	507	4186

Patients removed to City Hospital :—Smallpox Wards, 0 ; Scarlet Fever Wards, 2,329 ; Diphtheria Wards, 494 ; Typhoid Fever Wards, 46.

TABLE IX.

TEMPERATURE OF THE AIR AND GROUND, RAINFALL, SUNSHINE, AND WIND, IN EACH MONTH OF THE YEAR 1909.

Observed at the Birmingham and Midland Institute Observatory, Edgbaston, by Mr. Alfred Cresswell.

MONTH.	TEMPERATURE OF THE AIR.						TEMPERATURE OF THE GROUND.		HOURS OF SUNSHINE.		RAINFALL IN INCHES.		DAYS ON WHICH 0·01 INCH OR MORE OF RAIN FELL.	MILES OF WIND	
	Highest in the shade.		Lowest in the shade.		Mean for the Month.		Maximum at 1 foot deep.	Maximum at 4 feet deep.							
	1909.	Above or below the previous highest.	1909.	Above or below the previous lowest.	1909.	Above or below the average. *			1909.	Above or below the average. *	1909.	Above or below the average. *		1909.	Above or below the average.
JAN....	50·0	− 8·0	20·9	+ 10·1	38·0	+ 0·4	42·7	45·9	35	+ 1	0·96	− 0·99	11	8824	− 1361
FEB....	56·8	− 5·1	27·0	+ 19·0	36·8	− 1·4	43·3	44·0	51	+ 1	0·68	− 0·86	6	8914	− 520
MAR.	56·9	− 9·7	19·0	− 2·3	37·6	− 3·4	43·4	42·2	52	− 36	2·95	+ 1·15	16	9055	− 1374
APR.	69·7	− 9·3	31·0	+ 4·1	48·4	+ 3·3	47·0	45·2	167	+ 55	1·84	+ 0·33	14	9192	− 120
MAY...	78·6	+ 1·0	32·2	+ 1·2	52·0	+ 0·8	55·0	48·2	206	+ 70	1·68	− 0·47	9	8613	− 487
JUNE	67·6	− 5·2	41·3	+ 3·7	53·2	− 4·2	53·6	49·6	81	− 67	3·42	+ 1·31	14	8193	− 83
JULY	71·8	− 16·2	44·6	+ 5·1	58·5	− 1·6	57·3	52·0	146	2	3·22	+ 1·11	19	9840	+ 1677
AUG.	84·4	− 4·8	45·9	+ 4·7	60·6	− 1·5	62·0	54·3	164	+ 23	1·86	− 0·97	11	6909	− 1729
SEPT.	67·3	− 23·3	41·2	+ 8·2	53·6	− 2·1	54·0	53·4	58	− 56	2·55	+ 0·81	17	7050	− 968
OCT....	66·0	− 10·5	30·6	+ 2·7	50·3	+ 2·0	54·7	52·3	99	+ 30	3·45	+ 0·65	22	11435	+ 2544
NOV.	56·3	− 5·3	28·3	+ 8·3	40·8	− 2·3	48·6	50·0	31	− 3	0·79	− 1·39	13	8892	− 267
DEC.	51·9	− 4·1	22·6	+ 7·6	38·9	+ 0·4	44·2	46·4	38	+ 11	4·30	+ 1·98	23	11209	+ 1136

* In the twenty-two years 1887-1908.

TABLE X.

Temperature and Rainfall in each Month and Year from 1899 to 1909.

MEAN TEMPERATURE.

(From Maximum and Minimum Readings.)

Month	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average for 22 years 1887-1908	1909
	°	°	°	°	°	°	°	°	°	°	°	°
Jan.	40·6	39·2	37·4	40·2	39·1	38·8	37·9	40·6	38·1	36·0	37·6	38·0
Feb.	40·8	36·2	35·4	34·1	43·9	37·1	40·7	37·1	37·0	41·4	38·2	36·8
Mar.	41·2	37·8	38·6	44·6	44·0	39·7	43·9	40·8	44·1	39·0	41·0	37·6
Apr.	46·0	47·2	47·4	45·4	43·3	47·7	44·4	45·2	45·4	40·9	45·1	48·4
May	49·5	50·0	52·7	47·8	51·6	51·6	51·0	50·6	50·9	54·9	51·2	52·0
June	59·1	57·9	56·7	56·5	54·8	56·0	58·7	57·6	54·1	57·3	57·4	53·2
July	62·9	64·1	64·5	58·3	59·5	63·3	63·3	61·4	57·3	60·7	60·1	58·5
Aug.	64·5	59·6	60·5	57·5	57·2	59·1	57·9	63·4	57·8	58·3	59·1	60·6
Sept.	56·1	57·0	57·0	55·4	55·4	53·9	54·0	57·9	57·3	54·6	55·7	53·6
Oct.	49·0	49·1	49·3	49·2	50·4	49·7	44·7	50·9	49·5	53·2	48·3	50·3
Nov.	47·0	44·6	40·5	43·9	43·4	41·6	40·6	44·8	43·9	45·4	43·1	40·8
Dec.	35·9	44·0	37·5	39·5	37·5	38·4	40·0	37·5	39·5	38·7	38·5	38·9
Year	49·4	48·9	48·1	47·7	48·3	48·0	48·1	49·0	47·9	48·3	47·9	47·4

TOTAL RAINFALL.

Month	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average for 22 years 1887-1908	1909
Jan.	3·44	3·53	1·37	1·02	1·97	2·92	0·95	3·85	0·90	0·81	1·95	0·96
Feb.	1·99	4·28	1·34	1·60	1·41	3·80	0·68	2·04	1·09	1·21	1·54	0·68
Mar.	1·02	0·70	1·76	1·59	4·63	1·54	3·52	1·13	1·01	3·05	1·80	2·95
Apr.	2·40	0·92	1·95	2·49	1·64	1·12	2·30	1·32	1·93	2·34	1·51	1·84
May	2·20	2·09	1·11	2·95	2·67	2·25	0·28	2·78	3·93	3·01	2·15	1·68
June	3·28	2·41	1·84	2·40	1·66	0·46	2·00	2·86	2·57	3·22	2·11	3·42
July	1·10	1·74	3·13	1·59	2·14	2·50	1·91	0·89	2·90	2·22	2·11	3·22
Aug.	1·08	2·89	2·13	4·43	5·16	1·85	4·40	0·89	2·28	2·39	2·83	1·86
Sept.	2·80	0·80	0·65	1·49	2·55	1·40	1·01	1·18	0·90	2·33	1·74	2·55
Oct.	2·37	3·08	1·84	2·33	6·55	0·88	1·34	4·86	5·80	2·01	2·80	3·45
Nov.	1·49	2·40	1·23	2·23	1·65	1·37	3·04	2·58	2·07	1·84	2·18	0·79
Dec.	1·95	4·25	4·29	1·86	1·80	1·81	0·83	2·14	3·43	2·06	2·32	4·30
Year	25·12	29·09	22·64	25·98	33·83	21·94	22·30	26·56	28·86	26·51	24·96	27·73

TABLE XI.

Summary of Nuisances abated and other work done during the years 1908 and 1909.

	1908.	1909.
ABATEMENT OF NUISANCES.		
Houses cleansed (walls and ceilings)	857	678
Houses repaired...	1,659	1,506
Houses provided with better ventilation ..	53	62
Damp courses inserted	127	177
Cases of overcrowding remedied	39	41
Accumulations of water in cellars removed ...	282	303
Rain-water spouts repaired or disconnected ...	473	889
Ashpit privies converted to water-closets ...	212	160
Pan privies converted to water-closets ...	2,426	1,736
Privies and closets limewashed	359	367
Water-closets repaired or altered	1,285	1,745
Ashplaces repaired or reconstructed	317	352
Additional water-closets provided	63	68
Additional ashtubs provided	1,263	903
Urinals repaired or reconstructed	31	45
Drains relaid or repaired	547	602
Drains opened and cleansed	2,858	2,638
Drains efficiently trapped	2,562	1,768
Drains in cellars disconnected from the sewer or abolished	53	31
New sinks provided	785	690
Sink drains disconnected from the sewer ...	16	8
Sink bend-pipes repaired or affixed	131	170
Premises supplied with additional drains ...	490	337
Back yards paved	46	46
Back yards repaired	378	410
Tenants made to cleanse yard and outbuildings	162	72
Wash-houses repaired	280	314
Premises from which fowls have been removed	94	67
Nuisances from swine and swine styes abated	10	14
Accumulations of wash, manure &c., removed	224	187
Other nuisances abated...	242	465
Number of summonses	8	20
Amount of penalties	£0/0/0	£0/0/0
Amount of costs...	£2/1/0	£5/14/0
WORK OF CLEANSING STAFF.		
Courts cleansed by arrangement	6,676	6,627
Other courts cleansed	5,477	7,827
Pan privies swilled	15,634	17,167
Ashplaces swilled	33,579	38,909

TABLE XI.—*continued.*

	1908.	1909.
Houses stripped and limewashed	99	124
Other buildings limewashed	31	14
Amount charged	£51/7/0	£61/1/6
INSPECTION OF WATER-CLOSETS.		
Number of water-closets inspected	52,839	49,905
Number found with dirty basins	4,488	3,758
Number found with dirty seats	2,466	2,371
Number found with dirty floors	2,486	2,394
Number found obstructed	959	867
Number found defective	532	729
INFECTIOUS DISEASES.		
Houses disinfected	3,740	4,141
Beds, pillows, sheets, &c. disinfected	27,704	26,612
Garments disinfected	11,251	8,381
Other articles disinfected	11,767	8,434
Number of summonses	1	0
Amount of penalties	£0/0/0	—
Amount of costs...	£0/3/6	—
SMOKE NUISANCES.		
Observations made by inspectors	7,125	9,216
Infringements reported...	243	247
Manufacturers cautioned	108	80
Number of summonses	111	94
Amount of penalties	£66/12/6	£67/15/0
Amount of costs...	£38/12/6	£33/6/0
LODGING HOUSES.		
Number of common lodging houses	42	41
Lodgers allowed...	2,502	2,442
Registered houses let in lodgings	511	539
Lodgers allowed...	2,788	2,942
Visits by day to common lodging houses and houses let in lodgings	7,789	6,959
Visits by night to common lodging houses ...	510	456
Number of summonses	1	0
Amount of penalties	£0/5/0	—
Amount of costs...	£0/8/0	—

TABLE XI.—*continued.*

	1908.	1909.
CANAL BOATS.		
Number of canal boats on register	396	397
Number of inspections made	1,080	738
Breaches of regulations discovered:		
Cases of overcrowding	7	7
Sexes not separated...	2	2
Want of cleanliness...	0	0
Water receptacle not provided	8	13
Not in habitable condition	0	0
Other contraventions	44	58
FACTORY AND WORKSHOP ACT, 1901.		
Factories inspected	926	836
Workshops inspected	8,690	7,126
Workplaces inspected	771	746
Homeworkers' premises inspected	1,849	2,047
Nuisances under Public Health Act:		
Want of cleanliness...	2,165	1,477
Want of ventilation...	58	43
Overcrowding	2	9
Want of drainage of floors	11	11
Premises requiring repairs	105	83
Accumulations of rubbish	253	165
Defective drains	507	294
Other nuisances	449	292
Sanitary accommodation insufficient ...	88	63
Sanitary accommodation unsuitable or defective	1,839	912
Sanitary accommodation not separate for sexes	81	52
Offences under Factory and Workshop Act:		
Giving out work to unwholesome or infected premises	1	4
Number of summonses	4	1
Amount of penalties	£1/5/0	£1/0/0
Amount of costs...	£1/2/0	£0/8/0
Number of lists of outworkers received ...	388	539
Number of outworkers therein...	4,450	5,317
SHOP HOURS ACTS.		
Number of visits	11,260	10,608
Number of summonses...	16	1
Amount of penalties	£3/7/6	£0/0 0
Amount of costs...	£1/4/0	£0/9.0

TABLE XI.—*continued.*

	1908.	1909.
SEATS FOR SHOP ASSISTANTS ACT.		
Number of visits	175	942
Number of summonses	0	0
Amount of penalties	—	—
Amount of costs...	—	—
DAIRIES AND MILKSHOPS.		
Dairies on the register	12	12
Milkshops on the register	2,582	2,681
Purveyors on the register	506	516
Visits to dairies	32	39
Visits to milkshops and milk stores	3,443	3,479
Dirty churns found at railway stations ...	1	2
Dirty vessels found at milkshops and milk stores...	22	9
Shops, cellars, and pantries limewashed ...	77	87
Lamp oil, fish, tripe, and vinegar businesses prohibited	5	1
HEALTH VISITORS' WORK.		
Number of visits	32,485	37,914
Number of revisits	9,712	12,345
Instructions given to—		
Clean rooms	1,581	1,178
Remove filth from cellar	337	299
Destroy rubbish	2,502	3,349
Remove bedroom slops	2,136	1,411
Open windows	2,813	1,738
Unstop chimneys	229	145
Cleanse bedding	736	1,369
Use additional bedroom	192	204
Screen off beds	95	94
Get larger house	180	174
Provide additional beds	138	207
Get rid of lodgers	100	63
Wash children	2,270	3,040
Feed infants suitably	7,720	9,663
Clothe infants suitably	6,668	7,582
Obtain medical advice	337	981
Clean yard and outhouses	950	1,003

TABLE XII.—ANALYSIS OF CORPORATION WATER SUPPLY BY THE CITY ANALYST.

Date of Receipt of Sample.	PLACE WHERE TAKEN.	Parts per 100,000.								Appearance in 2ft. Tube.			
		Total Solid Matter.	Free Ammonia.	Albuminoid or Organic Ammonia.	Nitrogen in Nitrates.	Oxygen Consumed in 4 hours at 27° C. (80° F.)	Chlorine in Chlorides.	Hardness (as $CaCO_3$).	Alkalinity (as $CaCO_3$).	Turbidity.*	Red.†	Yellow.†	Blue.†
1909.													
Jan. 15th	1 Plough and Harrow Road	6·6	·000	·007	0	·19	1·0	3·0	2 8	0	0·8	3·2	0·2
,, 15th	Westm'ster Pl., Const'n Hill	6·4	·001	·005	0	·22	1·0	3·0	2·7	0	0·8	3·0	0·2
,, 15th	50 Spooner Street	6·2	·000	·005	0	·21	0·9	2·9	2·7	0	0·8	3·0	0·2
Feb. 12th	48 Frederick Road... ..	6·2	·000	·005	0	·16	1·0	2·9	2·7	0	0·6	2·6	0·0
,, 12th	32 Princess Road	6·4	·000	·005	0	·16	1·0	2·7	2·7	0	0·6	2·6	0·0
,, 12th	260 Sherlock Street ...	6·4	·000	·007	0	·17	1·0	3·0	2·7	0	0·6	2·6	0·0
Mar. 5th	6 Greenfield Crescent ...	6·0	·000	·006	0	·17	1·0	2·5	2·5	0	0·5	2·6	0·0
,, 5th	2 Yew Tree Road	5·8	·001	·007	0	·17	1·0	2·6	2·5	0	0·5	2·5	0·0
,, 5th	103 St. Luke's Road ...	6·0	·000	·008	0	·17	0·9	2·6	2·5	0	0·5	2·5	0·0
Apl. 20th	9 Yateley Road	6·2	·001	003	0	·13	1·0	2·5	2·6	0	0·2	1·6	0·2
,, 20th	33 Cannon Hill Road ...	6·2	·000	·003	0	·15	0·9	2·6	2·6	0	0·2	1·7	0·2
,, 20th	167 Belgrave Road ...	6·4	·000	·004	0	·14	0·9	2·7	2·6	0	0·2	1·7	0·2
May 14th	6 Chad Road	6·2	·000	·005	0	·12	0·9	2·3	2·5	0	0·2	1·7	0·2
,, 14th	Back of 170 Hockley Hill...	6·0	·001	·005	0	·14	1·0	2·5	2·4	0	0·2	1·7	0·2
,, 14th	29 Holborn Hill	6·2	·001	·006	0	·13	1·0	2·5	2·4	0	0·2	1·7	0·2
June 11th	14 Barnsley Road	6·4	·001	·005	0	·16	1·0	2·5	2·5	0	0·0	1·4	0·0
,, 11th	27 All Saints' Road ...	6·6	·001	·004	0	·16	1·0	2·7	2·6	0	0·0	1·4	0·0
,, 11th	97 Mount St. (Old Supply)	27·6	·000	·010	·06	·11	2·0	14·9	11·8	0	0·0	0·8	0·8

July 9th	93 Hagley Road	6·6	·000	·006	0	·13	1·1	2·9	2·7	0	0·0	1·4	0·0
,, 9th	4 Eldon Terr., Dolobran Rd.	5·8	·000	·005	0	·13	1·0	2·9	2·6	0	0·0	1·4	0·2
,, 9th	37 Warner Street	6·1	·001	·007	0	·13	1·0	3·0	2·7	0	0·0	1·4	0·2
Aug. 13th	16 Wentworth Road ...	6·0	·000	·006	0	·16	1·0	2·6	2·5	0	0·0	2·4	0·0
,, 13th	5 Farm Road	6·4	·000	·005	0	·16	1·0	2·5	2·5	0	0·0	2·4	0·0
,, 13th	3 Longmore Street... ...	6·0	·000	·006	0	·00	0·1	0·9	2·6	0	0·0	2·4	0·0
Sept. 13th	93 Hagley Road	6·0	·001	·007	0	·23	0·9	2·6	2·5	0	0·6	3·6	0·0
,, 13th	24 Sampson Road	6·0	·001	·006	0	·23	0·9	2·6	2·5	0	0·8	3·6	0·0
,, 13th	60 Green Street	5·8	·001	·005	0	·00	0·1	0·9	2·9	0	0·8	3·6	0·0
Oct. 15th	7 Westbourne Road ...	6·6	·000	·008	0	·20	0·9	2·9	2·5	0	1·0	4·8	0·0
,, 15th	79 Ford Street	6·2	·001	·008	0	·19	0·9	2·9	2·5	0	1·0	4·8	0·0
,, 15th	82 Oliver Street	6·6	·000	·007	0	·19	1·0	2·9	2·5	0	1·0	4·8	0·0
Nov. 5th	20 Harold Road	6·8	·000	·007	0	·27	0·9	3·2	2·7	0	1·4	6·0	0·0
,, 5th	61 Gem Street	7·2	·001	·005	0	·26	1·0	3·2	2·8	0	1·2	6·0	0·0
,, 5th	15 Vauxhall Grove... ...	6·2	·000	·006	0	·26	0·9	3·1	2·8	0	1·2	5·8	0·0
Dec. 3rd	177 Dudley Road	6·4	·000	·006	0	28	0·9	3·2	2·8	0	1·0	6·2	0·2
,, 3rd	47 Spencer Street	6·2	·001	·004	0	28	0·9	3·0	2·7	0	1·4	6·2	0·2
,, 3rd	13 Needham Street ...	6·2	·000	·005	0	·28	0·9	3·1	2·7	0	1·4	6·2	0·2
Average Results, 1909 ...		6·9	·000	·006	·0	·18	0·9	3·0	2·9	0·0	0·5	3·1	0·1
,, ,, 1908 ...		6·3	006	·005	0	·18	0 9	2·8	2·7	0·0	0·6	3·0	0·1
,, ,, 1907 ...		7·1	·001	·005	·0	·20	1·0	3·5	3·1	0·0	0·7	3·9	0·1
,, ,, 1906		6·1	·000	·006	0	·18	1·0	2·8	2·3	0·2	0·8	3·9	0·0
,, ,, 1905 ...		12·3	·001	·008	·0	·19	1·2	7·4	5·3	0·3	0·8	4·2	0 1

* "0" indicates "clear," "1" indicates "very slightly turbid."

† The colour is expressed in tintometer units. Red with an equal amount of yellow forms *orange*, yellow with an equal amount of blue forms *green*, and equal amounts of the three colours indicate *grey*.

TABLE XIII.

RETURN FOR THE PERIOD 1ST JULY, 1908, TO 30TH JUNE, 1909, RESPECTING THE VACCINATION OF CHILDREN WHOSE BIRTHS WERE REGISTERED IN THE CITY DURING THE SAID PERIOD.

	Number of Births returned in the "Birth List Sheets" as Registered.	Number of these Births duly entered in Columns I., II., IV., and V. of the "Vaccination Register" (Birth List Sheets), viz.:					Number of these Births which remained unentered in the "Vaccination Register" on account (as shown by Report Book) of			Number of these Births remaining neither duly entered in the "Vaccination Register" (cols. 3, 4, 5, 6 and 7 of this Return) nor temporarily accounted for in the "Report Book" (cols. 8, 9, and 10 of this Return).
		Col. I.	Col. II.		Col. IV.	Col. V.				
		"Successfully Vaccinated."	"Insusceptible of Vaccination."	"Had Smallpox."	"Number in respect of whom Certificates of conscientious objection have been received."	"Dead, Unvaccinated."	Postponement by Medical Certificate.	Removal to Districts the Vaccination Officer of which has been duly apprised.	Removal to places unknown or which cannot be reached; and cases not having been found.	
1	2	3	4	5	6	7	8	9	10	11
Birmingham Parish ...	7,288	5,431	24	—	147	800	61	115	695	15
Aston Union (within the City)	6,482	4,505	25	—	206	617	10	62	749	213
King's Norton Union (within the City) ...	1,631	1,330	6	—	101	102	28	25	36	3
Total	15,401	11,266	55	—	454	1,519	99	202	1,480	231

INDEX.

City of Birmingham.

HEALTH DEPARTMENT.

REPORT

ON

INDUSTRIAL EMPLOYMENT

OF

MARRIED WOMEN

AND

INFANTILE MORTALITY.

BIRMINGHAM:
Percival Jones Limited, Town Hall Printing Works, 148-149, Great Charles Street.

The Council House,

Birmingham,

February 14th, 1910.

To the Chairman and Members
of the Health Committee.

Gentlemen,

On May 10th, 1907, a letter was received from the Home Office to the effect that the Home Secretary had under consideration the question of the further regulation of the industrial employment of women before and after child-birth, as a result of the Report of the Physical Degeneration Committee and of the Conference on Infant Mortality. In order that fuller information as regards the effect of employment both before and after child-birth on the health of the mother and child, and as regards the social and economic effects of prohibition of such employment, might be obtained, a scheme of investigation was drafted and Medical Officers of Health were asked to take part in the collection of data, so that all industrial areas should be represented.

After the necessary preliminary consultations a scheme for this investigation was drawn up, and on laying this before your Committee I was instructed to obtain and forward to the Home Secretary the information available in Birmingham.

Such an investigation in this City appeared to be one that might be of considerable value, and it was therefore decided to do the work thoroughly in one of the areas where industrial employment of women was greatest, while at the same time the infantile mortality rate was highest.

The main questions which it is desired to answer are : (*a*)Does industrial employment of mothers prejudicially affect their health? (*b*) Does such employment affect the health of the infants born to working mothers? Incidentally a great many other points have emerged on which I shall be able to pass some comment.

In reading this Report it should be borne in mind that the numbers investigated are relatively small, and that the deductions from small numbers are always open to some fallacy. I do not think, however, that the statements made are inaccurate, as these statistics correspond closely with those obtained in previous investigations over much larger numbers.

SCOPE AND NATURE OF THE ENQUIRY.

The district selected for investigation comprised the two municipal wards of St. Stephen and St. George. (See map attached.) This district covers an area of 289 acres, and had an estimated population in 1908 of 41,884 persons. The mean death-rate in St. Stephen's Ward for the five years ending December, 1908, was 22·5 per 1,000, while that in St. George's Ward for the same period was 20·3 per 1,000. The infantile mortality rates in these wards will be found in the Table on the next page.

INFANT MORTALITY IN WARDS.

WARDS.	Infantile Mortality Rate per 1,000 Births.						Percentage Increase or Decrease in 1909, compared with the five years 1904–1908.
	1904.	1905.	1906.	1907.	1908.	1909.	
Rotton Park	178	134	136	135	117	116	– 17
All Saints'	173	126	166	129	135	111	– 24
Ladywood	192	160	157	133	118	128	– 16
St. Paul's	225	138	185	158	201	182	+ 1
St. George's	**213**	**151**	**161**	**150**	**169**	**166**	– 2
St Stephen's ...	**232**	**177**	**222**	**199**	**214**	**211**	+ 1
St. Mary's	331	201	207	200	208	208	– 9
St. Bartholomew's ...	263	207	268	198	201	155	– 32
Market Hall	187	186	195	199	208	139	– 29
St. Thomas'	196	164	199	135	153	157	– 7
St. Martin's	185	179	185	160	137	146	– 14
Edgbaston and Harborne	133	131	117	100	93	99	– 14
Deritend	208	205	201	179	159	141	– 26
Bordesley	146	131	132	119	107	94	– 26
Duddeston	217	171	158	171	174	167	– 6
Nechells	219	161	192	166	171	158	– 13
Balsall Heath	150	113	117	98	104	109	– 6
Saltley	178	140	130	125	105	107	– 21
City	195	155	168	147	145	135	– 17

Generally, it may be said that both wards are completely occupied by works and small dwelling-houses. The population density in St. Stephen's Ward in 1908 was 132·7 persons per acre, while that in St. George's was 162·1 persons per acre. The average density of the City as a whole was 44·2 per acre. It may be added that *the density of population in the two wards in question is very much greater* than in any other ward of the City. The whole district is occupied by houses which are from 60 to 100 years old. In 1896, when an enquiry was instituted as to the prevalence of houses of the back-to-back type, it was found that 63 per cent. of the houses in these wards were back-to-back.

In addition to the houses being old and of the back-to-back type, a considerable proportion of them are situated in common courtyards. There are no block buildings in the area. Works of various kinds are very numerous, so that the density figures of 132 and 162 persons per acre respectively do not represent the true crowding on space.

The most important industry of the district is metal working, and the number of chimneys emitting some smoke is considerable, so that in addition to other disabilities the people live under somewhat dull and gloomy conditions, due to the soot and the absence of trees and open spaces.

In the wards in question there are a large number of persons in very poor circumstances. In the two years during which this enquiry has been in operation trade depression has been evidenced by the large number of men who were unable to obtain employment. In the 1,212 homes visited regularly during 1908 no less than 45 per cent. had total incomes from all sources of less than 20s. per week, while 20 per cent. of the homes had less than 10s. per week. The district is one occupied almost entirely by poor people; children—boys and girls —and wives go out to work to supplement the family income to a larger extent than in most of the other districts in Birmingham.

To give some idea of the extent of this employment of women in these two districts I have extracted from the Census Report of the Registrar-General the following tabular statement, showing the number of married women or widows employed in certain specified occupations in 19 of the largest towns :—

PERCENTAGE OF MARRIED WOMEN OR WIDOWS EMPLOYED IN SPECIFIC OCCUPATIONS AT CENSUS, 1901.

London	17·2 %	Hull	9·4 %
Liverpool	14·5 %	Nottingham ...	24·1 %
Manchester	19·3 %	Leicester	25·2 %
Birmingham	19·0 %	Salford	16·6 %
Leeds	13·0 %	Portsmouth ...	12·8 %
Sheffield	11·0 %	Cardiff	8·4 %
Bristol	15·9 %	Bolton	15·1 %
West Ham	9·4 %	Croydon	11·8 %
Bradford	18·1 %	Sunderland ...	7·7 %
Newcastle	8·2 %		

Comparable figures for the district under investigation are not available, but some idea may be given by comparing the above with the statement that of the women who bore children during 1908, no less than 54 per cent. went out to work. I do not think it is far wrong to assert that in this area, having a population of over 40,000 persons, at least 50 per cent. of all the married women go to work before or after their infants are born. In 15 per cent. of the homes visited the woman's husband was out of work at the time of the visit.

The above description very briefly indicates the general character of the district and the large extent of the squalid poverty existing. Such conditions as have been described are just those most inimical to infant life, apart altogether from the question of the influence of industrial employment.

The district is for the present investigation an excellent one. The home conditions of those industrially employed do not differ to any large extent from those not so employed, and therefore the two groups may be compared without selection; indeed the figures in this Report deal with all the babies except 36, who were born

to better class parents, mostly shopkeepers, and a few others, 16 who were never found, and 209 who removed from the district and were lost sight of.

THE METHOD OF THE ENQUIRY.

From January 1st, 1908, to December 31st, 1908, every baby born (with 82 exceptions) was visited by Dr. Jessie Duncan, and at frequent intervals by Dr. Duncan or one of the two experienced Health Visitors associated with her in the work. At the first or subsequent visits the schedule of enquiry, copy of which is attached (see Appendix A) was filled in. At the age of twelve months each baby was weighed. In many cases systematic weighing had already been done at frequent intervals, and certain general remarks will be found at a later part of this Report on these weighings. Close contact was therefore maintained with each of these mothers during a whole year, and much information not available at the first visit was obtained at the subsequent visits.

The work of the three ladies—Dr. Duncan and the two Health Visitors—was of great value in producing a better condition of affairs in the homes, but this will not materially militate against the comparison of the employed mothers with the unemployed, as both received equal attention with a view to the prevention of infant mortality.

RESULTS OF THE ENQUIRY.

In the two wards there were 1,503 children born alive during 1908, and 39 still births were recorded. The birth-rate was therefore a high one, viz., 35·8 per 1,000 of the population.

Of the 1,503 children born in these two wards, it was found undesirable to include in the enquiry 36 on account of the fact that they were born in circumstances distinctly better than the 1,467 others, and therefore were not comparable.

Again, no less than 209 of the remaining infants were lost sight of during the twelve months ensuing after birth, and therefore no data can be given as to the effect of employment of the mothers of these infants. Forty-six further cases could not be found.

We have now left 1,212 mothers, and these may be sub-divided into 601 mothers who were not industrially employed during pregnancy, and 611 who were so employed. This is equal to 50·4 per cent. employed and 49·6 per cent. employed during pregnancy.

The same group of mothers may be divided into those employed after the birth of their children and while the child was still alive 31·5 per cent., and those not so employed 68·5 per cent. Certain of these mothers may have returned to work after the death of their infants, so that the percentage who returned to work after confinement is somewhat fallacious. The general conclusion may, however, safely be drawn that the number of mothers employed before the birth of their babies is much larger than the number employed afterwards, at any rate while the baby is alive, the figures being as follows :—

Employed before birth of infant, 50·4 per cent.
Employed after birth of infant, 31·5 per cent.

This is of importance in considering the effect of the mother's employment on the life and health of the infant and the probable effect of any further restrictive legislation.

The mortality among the infants born in 1908 of all mothers employed either before or after childbirth was at the rate of 190 per 1,000 births, while among those not industrially employed it was 207 per 1,000 births.

In this district, therefore, where half of the mothers go to work, the mortality is rather less, so far as the infant is concerned, among the working mothers than among those who are not industrially employed.

If we enquire into the mortality of those infants whose mothers were industrially employed during pregnancy we find that the rate was 198 per 1,000 births, and among those who did not work the rate was exactly the same.

Among the children of mothers who were industrially employed after confinement the mortality rate was 139 per 1,000, while among those whose mothers were not so employed it was 225. The great disparity between these two figures is no doubt largely due to the fact that a very great proportion of the deaths of infants occur in the first month of life, and at that particular period their mothers cannot go out to work.

Common sense would lead us to assert that the infants of mothers who go out to work must be at a disadvantage. I think it is probable that in considering the class of women dealt with in this investigation there are other points which have an even greater influence on infant mortality than the working of the mother. In many cases the additional income brought in by the mother had an important influence in the prevention of poverty, which is one great cause of a high infant mortality. Again, a certain natural selection may have operated, many women who go to work being thrifty and energetic, and determined not to get below the poverty line, nor yet to neglect their home duties.

The effect on the health of the mother of industrial employment is extremely difficult to state statistically. It must be remembered that much of the work is light and regular, often much lighter and more wholesome than that

done by many mothers with large families in their own homes. In the following table is set out the occupations of all the mothers reported on who were at work :—

OCCUPATION OF MOTHERS WHO WERE INDUSTRIALLY EMPLOYED.

Light presswork	142	Hawking	13
Heavy presswork	48	Bicycle polishing	12
Charing	95	Paper box making	12
Small shops	39	Foot stamping	12
Brass polishing	33	Power press	11
Machine work	30	Scratch brushing	11
Hook and eye carding	31	Pen grinding	8
Silver and gold polishing	14	Hand burnishing	9
Warehouse work	14	Laundry	9
Lathe work	19	Brass Lacquering	8
Machinist	6	Electro-plate polishing	6
Capstan lathe	6	Japanning	5
French polishing	15	Core making for brass casting	5
Soldering (hard)	8	Miscellaneous	31
Soldering (soft)	5		

The history of the women as regards their previous confinements was as follows :—

	Industrially employed.	Not industrially employed.
Total number of mothers	657	555
Children born alive*	1,859	2,162
Children now living	1,231	1,404
Died in first year	463	442
No previous confinement	164	55
Miscarriages and still births	252	251

* Not including the children born in 1908.

Stated as per 100 mothers these figures are as follows :—

	Industrially employed.	Not industrially employed.
Children born alive	283	389
Children now living	188	253
Died in first year	70	80
No previous births	25	10
Miscarriages and still births	38	45

The above tables indicate that the mothers not employed had larger families than those employed; in other words, that when the family gets large the mother is compelled to remain at home.

Taking the two groups of women, it is found that of 100 babies born prior to 1908 to those industrially employed, 25 died during the first year, while the corresponding figure for those not industrially employed was 20.

Similarly the figures for miscarriages show that to every 100 babies previously born to those women now industrially employed there were 14 miscarriages and still-births, while for those not now industrially employed there were 12 miscarriages. These figures are open to a certain amount of fallacy, as they assume that the group of employed mothers were always employed, while those unemployed in 1908 were always so unemployed.

It is probable that miscarriages and still-births are more frequent among the first few confinements than during later ones, and that the difference may be due to this rather than to industrial employment.

It is certain that the ages of the mothers in the two groups differed materially, as is shown below :—

AGES OF THE MOTHERS.

	Industrially employed.	Not industrially employed.
Under 25 years	33·3%	20·6%
From 25–35 years	49·6%	53·3%
Over 35 years	17·1%	26·1%

Taking the whole 1,212 mothers, the average age of those industrially employed was 28 years, while in the case of those not so employed it was 30.

Of the 1,212 mothers, 1,157 were living with their husbands, 24 were living apart, 7 were widows, and 24 were single women. As might be expected, 20 of the 24 women living apart from their husbands were employed industrially, while 22 of the single women were so employed.

In every instance enquiry was made as to why the mothers went out to work. Briefly the replies may be summarised as follows :—

(1)	Sole or main source of income ...	81
(2)	To supplement small income	556
(3)	Preference for industrial work ...	20

The work done by these industrially employed women brought in on an average 8s. 5d. per week. This varied from an average of 4s. 7d. per week in the case of those casually employed or in home work to as much as an average of 10s. 1d. per week in the case of some of those employed in factories.

It will be remembered that in 15 per cent. of the homes visited the woman's husband was out of work, so that even the small amount shown in the above average earnings of his wife enabled many to tide over a period of great poverty.

The total earnings of the household apart from the mother's wages in the case of employed mothers was as follows :—

	s.	d.
In homes where the mother did not go to work	23	1
In homes where the mother worked ...	20	1

It is possible to still further sub-divide the mothers who were employed into those who worked at home, those who worked in factories, and those who worked elsewhere than in factories, as, for instance, charwomen.

Engaged in home work	135 = 20·5%
Engaged in factories and workshops	463 = 70·5%
Engaged in work elsewhere	59 = 9·0%

Details in regard to each of these groups will be found in Table I. in the Appendix to this Report.

Certain statistics are set out in Table II. at the end of this Report on this subject which may be summarised as follows :—

	Within	Infants who survived 1st year. per cent.	Infants who died in 1st year. per cent.
Industrial work discontinued before confinement.	1 week	113 = 23·1 ...	27 = 22·3
	1 to 2 weeks ...	25 = 5·1 ...	5 = 4·1
	2 to 3 "	33 = 6·7 ...	11 = 9·1
	3 to 4 "	12 = 2·5 ...	7 = 5.8
	4 to 8 "	93 = 19·0 ...	22 = 18·2
	8 to 12 "	48 = 9·8 ...	10 = 8·3
	12 to 26 "	132 = 26·9 ...	30 = 24·8
	Over 26 weeks ..	34 = 6·9 ...	9 = 7·4
	Within		
Industrial work resumed after confinement	4 weeks	50 = 15·2 ...	7 = 13·2
	4 to 6 weeks ...	68 = 20·7 ...	18 = 34·0
	6 to 8 " ...	54 = 16·4 ...	9 = 17·0
	8 to 12 "	36 = 10 9 ...	7 = 13·2
	12 to 52 "	121 = 36·8 ...	12 = 22·6
	Not within 1 year ..	0 = 0·0 ...	0 =0·0

Here again our figures are too small to allow of accurate deductions, but when these are added to those from other towns they will give a good indication of the effect of employment on the health of the infant.

The above figures show generally the customs existing among employed women. No less than 140 of the employed women continued to work up to within a week of their confinement, while 205 stopped work over three months before confinement. At present the legislature has enacted that no woman shall knowingly be employed in any factory or workshop within four weeks of having given birth to a child. so that presumably 57 women returned at the earliest possible moment, some of them before they were legally entitled to do so.

As already indicated, there are naturally many more women employed just before confinement than there are just after.

There were during the year 104 still births and premature births. The health of the mothers in these 104 instances is shown in the following figures :—

Still Births and Premature Births (104).

Health of Mother at first visit.	Mothers industrially employed before confinement.	Mothers who were not employed.
Good	16	16
Indifferent	26	30
Bad	6	8
Dead at first visit	1	1

The next statement shows how the babies of industrially employed women were dealt with as regards their nursing :—

	Babies who survived one year.	Babies who died in first year.
Nursed at home by mother ...	281 or 53%	77 or 62%
Nursed at home by other person	148 or 28%	21 or 17%
Put out to nurse	103 or 19%	27 or 21%

Considering the difficulties involved in rearing young babies, the number of those mothers who had to put out their babies to nurse is creditably small.

A careful note was made in each instance of the condition of the baby, taking into consideration not only its weight but also its general condition, and these results may be tabulated as follows :—

Mother's Work.	Condition of Child at 12 months.			Dead.—Age.	Rental of House.	Wages of Husband.
	Good.	Fair.	Unsatisfactory.			
Not industrially employed.	282 = 50 %	125 = 23 %	33 = 6 %	Under 1 week ... 18 1 to 4 weeks .. 12 1 to 6 months ... 57 6 to 12 months... 28 = 21 %	2/- to 3/- ... 15 3/- to 4/- ... 63 4/- to 5/- ... 287 5/- to 6/- ... 97 Over ... 93	Out of work ... 55 Under 10/- ... 27 10/- to 20/- ... 110 20/- to 30/- ... 288 30/- to 35/- ... 50 Over ... ... 24 Illegitimate .. 1
At work before and after confinement.	155 = 46 %	93 = 28 %	37 = 11 %	Under 1 week ... — 1 to 4 weeks ... — 1 to 6 months ... 18 6 to 12 months... 31 = 15 %	2/- to 3/- ... 52 3/- to 4/- ... 56 4/- to 5/- ... 169 5/- to 6/- ... 33 Over .. 24	Out of work ... 57 Under 10/- ... 11 10/- to 20/- ... 97 20/- to 30/- ... 142 30/- to 35/- ... 8 Over ... ... 6 Illegitimate ... 13
At work before but did not resume after confinement.	128 = 46 %	63 = 22 %	14 = 6 %	Under 1 week .. 18 1 to 4 weeks ... 7 1 to 6 months ... 37 6 to 12 months... 10 = 26 %	2/- to 3/- ... 25 3/- to 4/- ... 54 4/- to 5/- ... 145 5/- to 6/- ... 45 Over ... 8	Out of work ... 48 Under 10/- ... 13 10/- to 20/- ... 83 20/- to 30/- ... 124 30/- to 35/- ... 4 Over ... ... — Illegitimate .. 5
No work before but employed after confinement.	20 = 43 %	18 = 39 %	4 = 9 %	Under 1 week ... — 1 to 4 weeks . — 1 to 6 months ... 1 6 to 12 months... 3 = 9 %	2/- to 3/- ... 4 3/- to 4/- ... 11 4/- to 5/- ... 26 5/- to 6/- ... 5 Over ... —	Out of work ... 10 Under 10/- .. 4 10/- to 20/- ... 14 20/- to 30/- ... 17 30/- to 35/- ... — Over ... ... 1 Illegitimate ... —

Somewhat similar figures were kept in regard to the health of the mother, and these are given in the annexed table :—

HEALTH OF MOTHERS AT FIRST VISIT.

	SURVIVING CHILDREN.		CHILDREN WHO DIED.	
	No.	Percentage.	No.	Percentage.
Good	378	39	86	36
Indifferent	422	43	114	47
Bad	172	18	40	17

The connection between the employment of women before marriage and the condition of the children subsequently born to them, and coming within the present enquiry, is indicated in the table below :—

	Total.	Condition of Child at 12 months.			
		Good.	Fair.	Unsatisfactory.	Dead.
Women who have never worked in a factory	155	77 = 50%	36 = 23%	10 = 6%	32 = 21%
Women engaged in factory work from 14 years of age and during present pregnacy ...	611	283 = 46%	156 = 26%	51 = 8%	121 = 20%
In factory from 14 years till marriage, but no work since then	231	122 = 53%	54 = 23%	13 = 6%	42 = 18%
In factory from 14 years of age, but not during present pregnancy	215	103 = 48%	53 = 25%	14 = 6%	45 = 21%
Total	1212	585 = 48%	299 = 25%	88 = 7%	240 = 20%

I regard as probably one of the most important influences of the industrial employment of women the obvious fact that girls and young women who are employed in industrial work for many hours daily can

have but little time to make themselves practically familiar with the very numerous and often apparently unimportant matters which make all the difference between a well-ordered home and one which lacks the influence of a capable mother.

The fact of employment in factories after confinement obviously militates against a mother feeding her child naturally. This is shown clearly in the two following tables, which show in the case of (*A*) the method in which the babies were fed who lived twelve months, and (*B*) those who died during the twelve months. The prominent fact shown by these tables is that 75 per cent. of the mothers who were not industrially employed and whose babies lived for twelve months breast-fed their babies up to the age of six months, while only 27 per cent. of those mothers industrially employed did so.

HOW THE BABIES WERE FED BY THEIR MOTHERS.

A—Babies Alive at the end of Twelve Months.

	Mothers industrially employed after confinement.		Mothers not industrially employed after confinement.	
Breast only—				
1st month ..	306	93 per cent.	609	95 per cent.
2nd " ...	202	61 "	565	88 "
3rd " ...	158	48 "	523	81 "
4th " ...	132	40 "	501	78 "
5th " ...	103	31 "	487	76 "
6th " ..	89	27 "	480	75 "
Breast partly—				
1st month ...	1	·3 per cent.	7	1 per cent.
2nd " ...	86	26 "	21	3 "
3rd " ...	117	36 "	47	8 "
4th " ...	130	40 "	53	8 "
5th " ...	135	41 "	54	8 "
6th " ...	154	47 "	39	6 "
Artificial food entirely—				
1st month ...	22	7 per cent.	27	4 per cent.
2nd " ...	41	13 "	57	9 "
3rd " ...	54	16 "	73	11 "
4th " ...	67	20 "	89	14 "
5th " ...	91	28 "	102	16 "
6th " ...	86	26 "	124	19 "

B—Babies Dead at end of Twelve Months.

Too feeble to take food and died within a few hours of birth ... 39

	Mothers industrially employed after confinement.	Mothers not industrially employed after confinement.
Breast only—		
1st month ...	47 equal to 89 per cent.	118 equal to 80 per cent.
2nd " ...	23 " 43 "	63 " 55 "
3rd " ...	13 " 27 "	43 " 48 "
4th " ...	10 " 24 "	31 " 46 "
5th " ...	8 " 20 "	22 " 42 "
6th " ...	6 " 18 "	18 " 47 "
Breast partly—		
1st month ...	1 equal to 2 per cent.	3 equal to 2 per cent.
2nd " ...	19 " 36 "	10 " 18 "
3rd " ...	19 " 40 "	13 " 15 "
4th " ...	19 " 45 "	13 " 19 "
5th " ...	17 " 44 "	8 " 16 "
6th " ...	13 " 39 "	4 " 11 "
Artificial food entirely—		
1st month ...	5 equal to 9 per cent.	27 equal to 18 per cent.
2nd " ...	11 " 21 "	42 " 37 "
3rd " ...	16 " 33 "	33 " 37 "
4th " ...	13 " 31 "	24 " 35 "
5th " ...	14 " 36 "	22 " 42 "
6th " ...	14 " 43 "	16 " 42 "

I have shown in the Annual Report for 1904, page 42, that the mortality from summer diarrhœa was in the whole population about 30 times greater among bottle-fed children than among breast-fed children, so that if a similar mortality maintains among the babies referred to above, factory labour, by preventing breast-feeding must have a pernicious influence.

A certain number of women employed in factories have their babies brought to them at the factory in order that they may continue the feeding, while a few others are permitted to leave so that they may feed their infants at intervals.

At the end of twelve months the weight of 816 babies was accurately obtained. Of these, 260 were the infants of mothers industrially employed after confinement, 157 were infants of women employed before but not after con-

finement, and 399 were those of mothers not industrially employed either before or after confinement. The average weights of the children were as follows :—

		Average Weight of Babies.
260	Industrially employed mothers after confinement ...	17·3 lbs.
157	Industrially employed mothers before but not after confinement	18·0 lbs.
399	Mothers not industrially employed	18·0 lbs.

The value of breast-feeding has been so often referred to that it is not surprising to find that the babies so fed were heavier and better nourished children. The weight of the baby in relation to its feeding up to six months of age is shown in the following table :—

	No. of Babies weighed.	Average Weight of Babies at 12 months.
All Infants breast-fed for 6 months	466	18·0 lbs.
All Infants partially breast-fed for 6 months ..	177	17·2 lbs.
All Infants bottle-fed for 6 months	173	17·2 lbs.

In the course of these weighings it was found that the question of the degree of poverty had a very considerable influence on the infant, whether breast-fed or not. This is shown in the following figures :—

Income of Family, excluding Mothers, at Time of Birth.	No. of Babies Weighed.	Average Weight of Baby at 12 Months.
Father out of Work	107	17·6 lbs.
Total Income under 10s. per week	52	16·8 ,,
,, ,, 10s.—20s.	303	17·5 ,,
,, ,, 20s.—30s. ,, ...	300	18·3 ,,
,, ,, over 30s.	39	18·8 ,,
Illegitimate Children, no income at first visit	15	18·0 ,,

These figures very clearly show the powerful effect of poverty on the infant. It does not very much matter whether the mother is industrially employed or not or whether the infant is breast-fed or not, if great poverty exists the infant suffers from want of nutrition, as evidenced in these average weights.

I have on former occasions indicated the need which appears to me to exist for some institution capable of supplying food to hungry expectant mothers and to mothers who are nursing their infants and are badly nourished. I feel strongly that a large number of infants start life at a very great disadvantage, because during intra-uterine life or during the first six months their mothers have not been able to nourish them. We suffer greatly from these defectively nourished babies in Birmingham and elsewhere.

There is, moreover, another claim which may (however sentimental it may be regarded) be fairly urged, and urged with confidence in its accuracy—that is that these mothers live more exacting and self-denying lives than probably any other group in the community. I have personal knowledge, and have the testimony of many reliable workers, that what food comes into the house is given to the children or the husband, while they themselves go on from day to day in a state of semi-starvation.

The life of a mother among the poorer classes is always a strenuous one if the family is large, but when hunger is added, and particularly when such a woman is an expectant or nursing mother, the condition is a particularly distressing one. Yet numbers of such mothers can be found in the district under consideration. In some of the Continental towns restaurants have been estab-

lished where any expectant or nursing mother may go and have two good meals daily at the cost of charity. Obviously such an institution is no sufficient remedy; but bearing in mind that the poverty is usually in no way due to the mother herself, and that immediate help is necessary to prevent her offspring from being injuriously affected, it appears that such a restaurant is a temporary if insufficient expedient which can be properly advocated.

To give a graphic representation of the effect of poverty on the weight of the child, I have appended to this Report six charts. Three of these show the weights of breast-fed babies where there was no apparent poverty, and three others the weights of babies who were also breast-fed, but where poverty existed before the infants were born, and continued till the child passed out of our purview at one year of age. These charts have been selected as fairly representative of the two groups of infants. There are, of course, heavier babies in the one group and more defective ones in the other.

GENERAL CONCLUSIONS.

The figures dealt with in this Report relate to women, many of whom are in a state of poverty, and, as already pointed out, this alone has such an evident pernicious influence on the health of the mother and her offspring that the influence of industrial employment is to a considerable extent masked.

Bearing this in mind and taking into consideration our previous investigations on somewhat similar lines, it may be said that in Birmingham the type of industrial employment in vogue does not appreciably influence the health of the mother or her infant when the standard of comparison is that of women in equally poor circumstances who are not employed industrially.

While this is the opinion I have come to from an investigation of the facts in these poverty-stricken districts, I do not for a moment maintain that such industrial employment is free from all harmful influence. The mere fact that it prevents breast-feeding in the majority of cases is in my opinion a reason for some State interference. Here, however, it appears to be a question in this Birmingham area as to whether the additional poverty which would be occasioned by preventing mothers from working for, say, six months after a birth, would not be the greater of two evils.

The effect of such employment on the health of the mother is somewhat indefinite, and in the majority of cases is masked by the conditions of poverty already referred to. That there were rather more miscarriages and still-births among those industrially employed is not in itself sufficient evidence, for these women were distinctly more poverty-stricken.

Probably the factory or workshop employment in itself is in the majority of cases not more exacting on a pregnant woman than that which the mother of a large family has to perform daily at home.

Frequent reports are made to me by Health Visitors, Teachers, and others as to the dirty condition of the homes or the neglected condition of the children in the case of those mothers who go out to work.

I have avoided dealing with many other points, which will be elucidated when large numbers of such enquiries are collected together, as our Birmingham figures are insufficient.

I desire to add that the work which Dr. Jessie Duncan has done, and on which this Report is based, is characterised by its accuracy and thoroughness. She has spent her whole time among those residing in St. Stephen's and St. George's Wards, and is familiar with every phase of life in these districts. This has enabled her to check and correct the statements made by the mothers she has interviewed. Her visits have been greatly appreciated, and as a result a large number of these poor women bring their babies or send them regularly for inspection and weighing.

I am,
Gentlemen,
Your obedient Servant,
JOHN ROBERTSON.

APPENDIX A.

Private and Confidential.

BIRTH INQUIRY FORM.

No. of case — Date of first visit

Sanitary district — Date of last visit

Mother. Name

Address

Age — Race and nationality

Living with husband. *Living apart.* *Widowed.* *Unmarried.*

General health. *Good.* *Indifferent.* *Bad.*

Character of Confinement

Doctor. *Midwife.* *Institution.*

Previous History. No. of Miscarriages — Still Births

Children born alive — Now living — Died in 1st year of life

Description of work before present pregnancy

Other information

Work during pregnancy. How long ceased before birth

Precise occupation

Carried on at home. *In factory or workshop.* *Elsewhere.*

Weekly earnings — Nature of work. *Heavy.* *Light.*

Special conditions

Work after birth. Resumed — weeks after birth.

Why resumed

Precise occupation

Carried on at home. *In factory or workshop.* *Elsewhere.*

Weekly earnings — Nature of work. *Heavy.* *Light.*

Special conditions

Child. Full Name — Date of birth

Male. *Female.* *Legitimate.* *Illegitimate.* *Firstborn.* *Premature.* *Full Time.*

Condition at first visit — at last

If death occurs, age at death — Cause of death

Feeding during first six months of life.

Breast entirely for — weeks.

Artificial food partly since — Why

Artificial food entirely since — Why

Nursing. *By Mother.* *By other person at home.* *Put out*, where

Father. Occupation — Weekly earnings

Race and Nationality

Health. *Good.* *Indifferent.* *Bad.*

Home. Rent — No. of rooms

Condition

No. of family at home — Weekly income of family

No. of lodgers

Remarks

INQUIRY AS TO INDUSTRIAL EMPLOYMENT OF MARRIED

I.—CASES UNDER

		ALL CASES.			IN CASE OF AT HOME.		
		Surviving first year.	Dying in first year	Total.	Surviving first year.	Dying in first year.	Total.
Children born alive		972	240	1,212	109	26	135
Still Births		—	—	39	—	—	3
Premature Births		17	47	64	3	4	7
Age of mother	< 25 years	256	77	333	8	4	12
	< 35 years	506	116	622	58	12	70
	over 35 years	210	47	257	43	10	53
Previous confinements	Miscarriages, Still Births ...	401	102	503	71	12	83
	Children born alive	3,171	850	4,021	504	127	631
	Children now living	2,213	422	2,635	357	93	450
	Children died in first year ...	636	269	905	95	31	126
	No previous confinement ...	176	43	219	7	1	8
Status of mother	living with husband	929	228	1,157	107	23	130
	living apart	21	3	24	0	0	0
	widowed	4	3	7	0	2	2
	single	18	6	24	2	1	3
Reason for industrial employment of mother	A—as sole or main source of income	68	13	81	5	5	10
	B—to supplement small income	446	110	556	99	21	120
	C—preference for industrial work	18	2	20	5	0	5
Households (number of)		972	240	1,212	109	26	135
Average	number of rooms per household ...	3·2	3·0	3·1	3·3	2·9	3·2
	number of persons per room (including lodgers)	1·6	1·7	1·6	1·9	2·1	1·9
	rental	4/6	4/4	4/5	5/1	4/6	4/11
Average weekly earnings of mother	before confinement	8/7	8/6	8/7	4/5	4/9	4/6
	after confinement	8/3	8/8	8/4	4/6	5 3	4/7
Average total weekly income of family, not including mother		21/9	20/8	21 7	22/–	20/5	21/10

WOMEN, AND INFANTILE MORTALITY (1908).
ENQUIRY.

MOTHERS INDUSTRIALLY EMPLOYED.

IN FACTORY OR WORKSHOP.						ELSEWHERE.			IN CASE OF MOTHERS *NOT* INDUSTRIALLY EMPLOYED.		
IN LEAD.			OTHERWISE.								
Surviving first year.	Dying in first year	Total.	Surviving first year	Dying in first year.	Total	Surviving first year.	Dying in first year.	Total.	Surviving first year.	Dying in first year.	Total.
5	0	5	372	86	458	46	13	59	440	115	555
—	—	0	—	—	11	—	—	2	—	—	23
0	0	0	7	16	23	1	3	4	6	24	30
2	0	2	159	43	202	2	1	3	85	29	114
3	0	3	179	38	217	27	9	36	239	57	296
0	0	0	34	5	39	17	3	20	116	29	145
4	0	4	100	29	129	26	10	36	200	51	251
8	0	8	751	188	939	224	57	281	1,684	478	2,162
5	0	5	470	111	581	157	38	195	1,224	180	1,404
0	0	0	211	66	277	44	16	60	286	156	442
2	0	2	123	29	152	2	0	2	42	13	55
5	0	5	338	79	417	44	13	57	435	113	548
0	0	0	17	2	19	1	0	1	3	1	4
0	0	0	3	1	4	0	0	0	1	0	1
0	0	0	14	4	18	1	0	1	1	1	2
0	0	0	59	8	67	4	0	4	0	0	0
5	0	5	300	77	377	42	12	54	0	0	0
0	0	0	13	1	14	0	1	1	0	0	0
5	0	5	372	86	458	46	13	59	440	115	555
3·6	—	3·6	2·8	2·6	2·7	3·0	2·7	2·9	3·5	3·3	3·4
1·1	—	1·1	1·4	1·6	1·5	2·1	2·2	2·1	1·7	1·6	1·6
4/4	—	4/4	3/11	3/11	3/11	4/3	4/5	4/3	4/10	4/8	4/10
11/9	—	11/9	10/3	10/5	10/4	4/9	4/3	4/7	—	—	—
8/–	—	8/–	9/9	9/11	9/9	4/11	5/11	5/1	—	—	—
22/10	—	22/10	19/8	18/7	19/6	20/–	19/–	19/9	23/5	22/2	23/1

Appendix B.

II.—EMPLOYMENT OF MOTHER IN RELATION TO HEALTH OF CHILD.

A.—Children surviving first year.

			Total.	In case of mothers industrially employed.				In case of mothers *not* industrially employed.
				At home.	In factory or workshop.		Elsewhere.	
					In lead	Otherwise.		
No work before confinement			42	5	1	28	8	...
Industrial work discontinued before confinement.	1 week ...		113	63	...	39	11	...
	2 weeks...		25	5	1	16	3	...
	3 weeks...		33	7	1	21	4	...
	4 weeks...		12	3	...	9	...	...
	8 weeks...		93	9	...	80	4	...
	12 weeks .		48	7	...	38	3	...
	26 weeks..		132	8	2	112	10	...
	over 26 weeks		34	2	...	29	3	...
Industrial work resumed after confinement, within	4 weeks..		50	44	...	6	...	...
	6 weeks...		68	12	...	51	5	...
	8 weeks...		54	4	1	41	8	...
	12 weeks...		36	4	..	31	1	...
	52 weeks...		121	7	1	103	10	...
	not within year...		...	..	...	...	...	...
Nursed (at last visit)	at home	by mother	719	105	4	143	29	438
		by other person	148	4	1	131	12	...
	put out		105	...	...	98	5	2
Feeding	breast alone	1 month	915	103	5	347	45	415
		2 months	767	85	5	256	34	387
		3 months	681	83	4	206	29	359
		4 months	633	80	4	175	27	347
		5 months	590	78	4	146	26	336
		6 months	569	77	4	132	24	332
	breast partly	1 month	8	...	...	3	1	4
		2 months	107	7	..	74	12	14
		3 months	164	6	1	114	12	31
		4 months	183	6	1	130	13	33
		5 months	189	5	1	139	12	32
		6 months	193	6	1	144	14	28
	artificial entirely	1 month	49	6	...	22	...	21
		2 months	98	17	...	42	...	39
		3 months	127	20	...	52	5	50
		4 months	156	23	...	67	6	60
		5 months	193	26	...	87	8	72
		6 months	210	26	...	96	8	80

Appendix B.

II.—EMPLOYMENT OF MOTHER IN RELATION TO HEALTH OF CHILD.

B.—Children dying in first year.

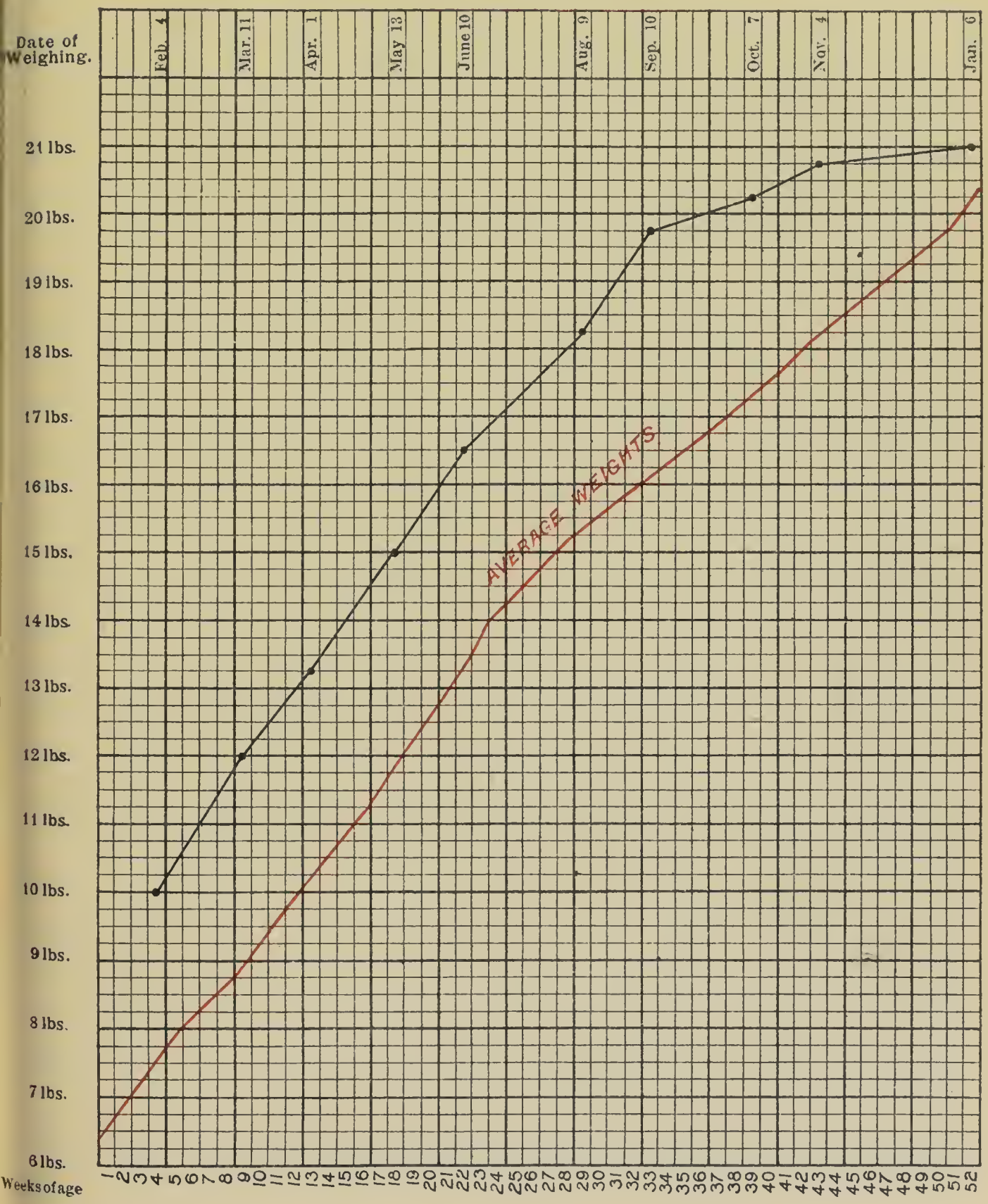
		Total.	In case of mothers industrially employed.				In case of mothers *not* industrially employed.
			At home.	In factory or workshop.		Elsewhere.	
				In lead	Otherwise		
No work before Confinement		4	...	...	4	...	..
Industrial work discontinued before confinement.	1 week	27	12	...	13	2	...
	2 weeks	5	3	...	2	...	...
	3 weeks	11	1	...	8	2	...
	4 weeks	7	1	...	5	1	...
	8 weeks	22	4	...	17	1	...
	12 weeks	10	...	...	7	3	...
	26 weeks	30	5	...	21	4	...
	Over 26 weeks	9	...	...	9	...	...
Industrial work resumed after confinement, within	4 weeks		6	...	1	...	...
	6 weeks	18	2	...	14	2	...
	8 weeks	9	1	..	7	1	...
	12 weeks	7	1	...	5	1	...
	52 weeks	12	...	...	11	1	...
	Not within year	...	..	...	...	...	...
Nursed (at last visit).	At home—by mother	187	22	...	47	8	110
	At home—by other person	22	...	...	17	4	1
	Put out	31	4	...	22	1	4
Feeding—Breast alone	Too feeble to suck	39	3	...	12	2	22
	1 month	165	19	...	61	10	75
	2 months	86	7	...	33	5	41
	3 months	56	5	...	19	4	28
	4 months	41	5	...	12	3	21
	5 months	30	5	...	8	2	15
	6 months	24	4	...	6	2	12
Feeding—Breast partly	1 month	4	..	...	2	1	1
	2 months	29	5	..	14	4	6
	3 months	32	4	...	17	3	8
	4 months	32	3	...	18	3	8
	5 months	25	2	...	15	2	6
	6 months	17	1	...	11	2	3
Feeding—Artificial entirely		237	32	...	76	10	119
Age at death	1 month	49	4	...	16	3	26
	2 months	37	4	...	13	1	19
	3 months	30	3	...	10	...	17
	6 months	54	5	...	20	2	27
	12 months	70	10	...	27	7	26
Cause of death...	Infectious diseases	23	3	...	5	2	13
	Wasting diseases (including premature birth)	75	8	...	25	3	39
	Other diseases	142	15	...	56	8	63
Mean age at death in months		3·8	4·0	...	4.1	4·7	3·5

NO POVERTY.

(D11806)

Name, C. F. Date of Birth, Jan. 6th, 1909.

Method of Feeding, Breast only.

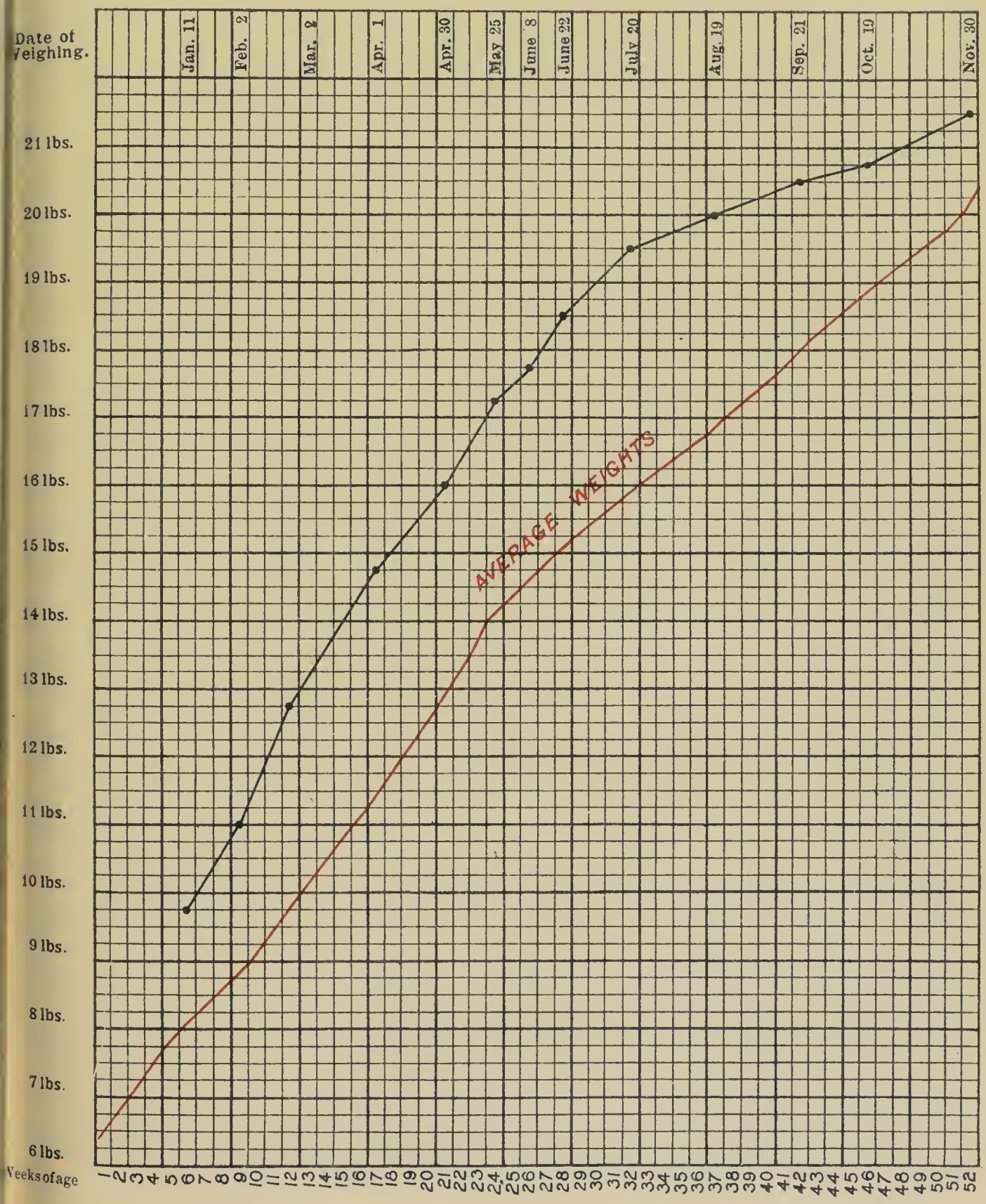


NO POVERTY.

(D11806)

Name, B. M. Date of Birth, Aug. 18th, 1908.

Method of Feeding, Breast only.



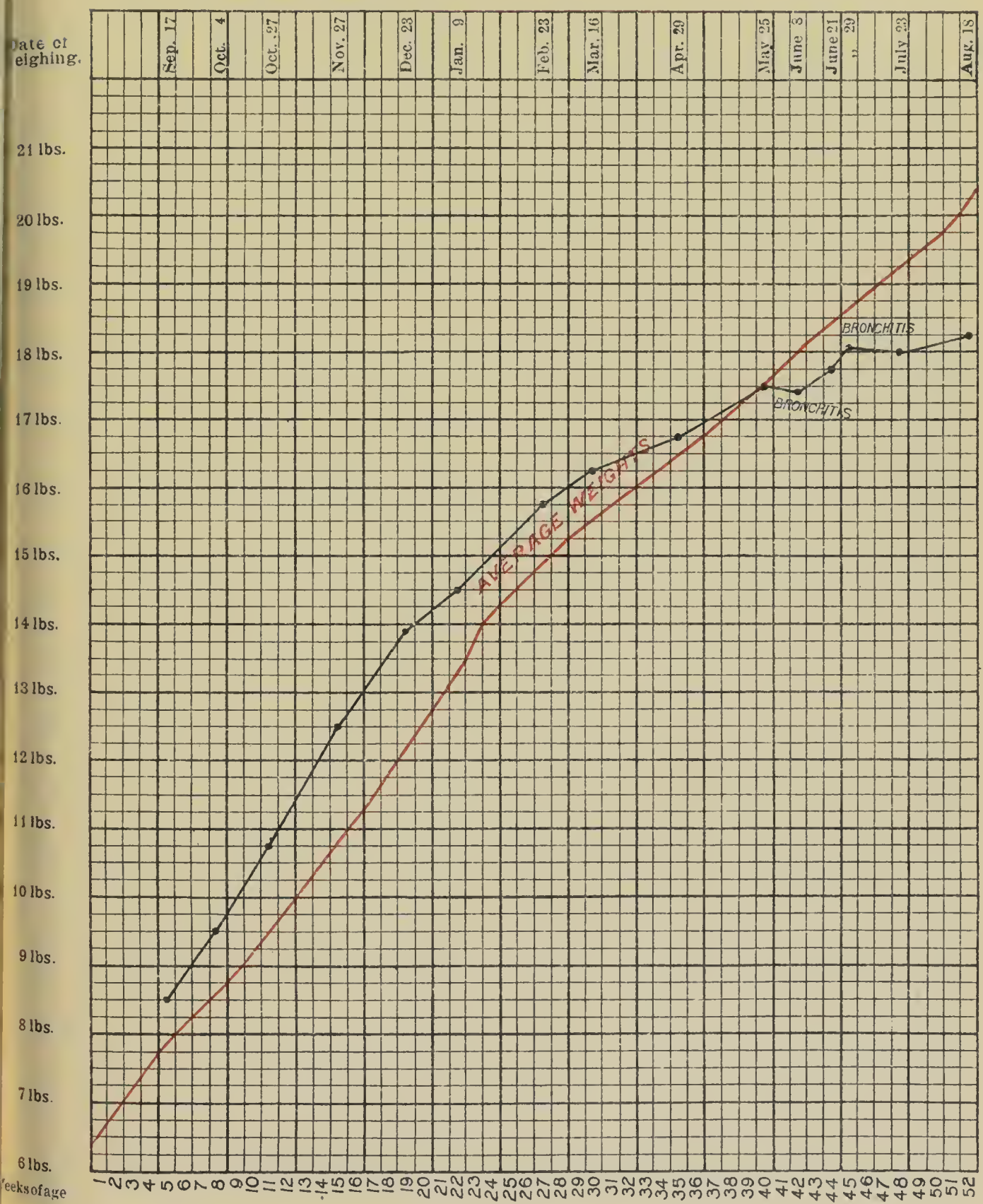
NO POVERTY.

(D11806)

Name, A. H.

Date of Birth, Nov. 29th, 1908.

Method of Feeding, Breast only.

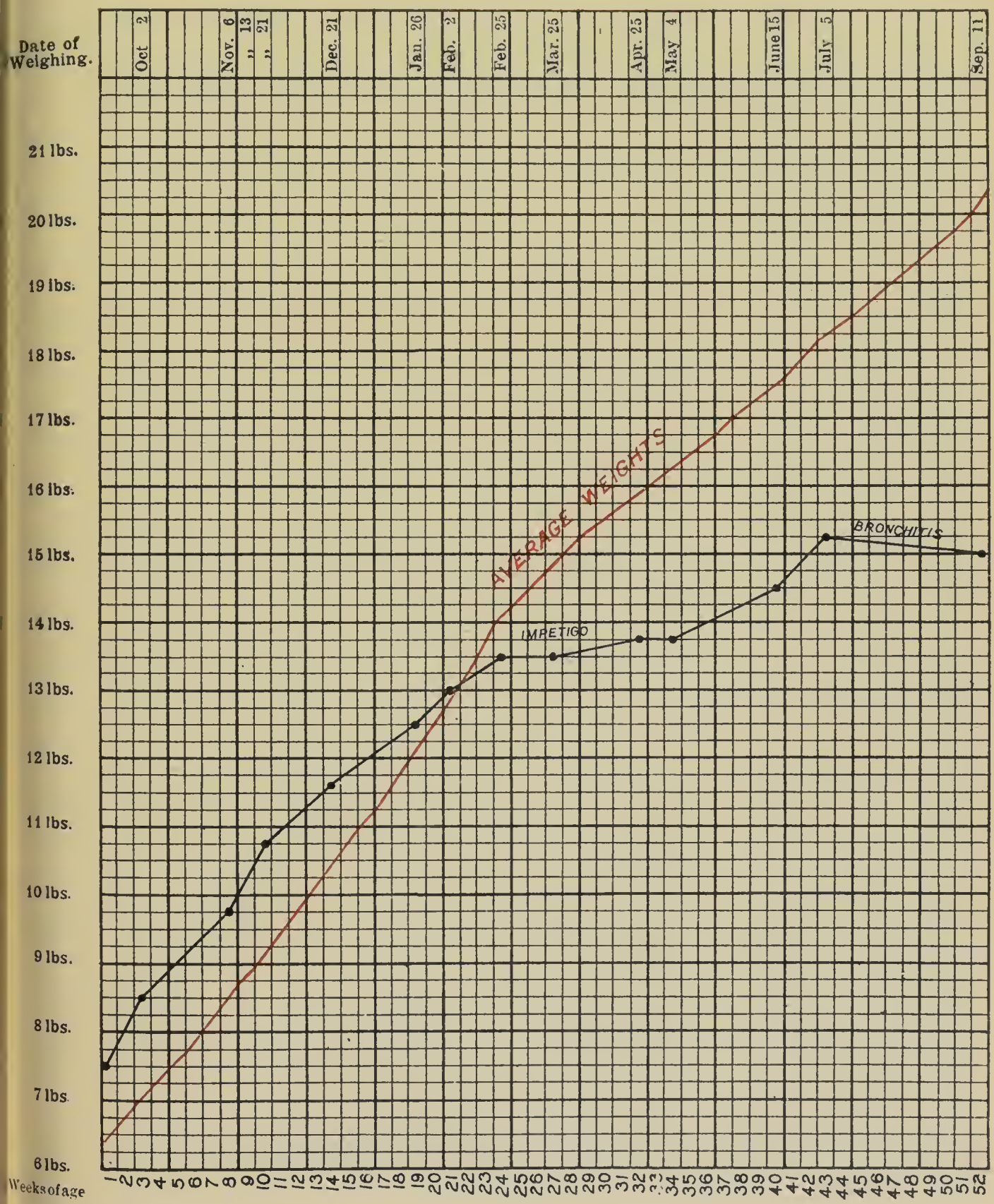


POVERTY.

(D11806)

Name, H. C. Date of Birth, Sept. 11th, 1908.

Method of Feeding, Breast only.



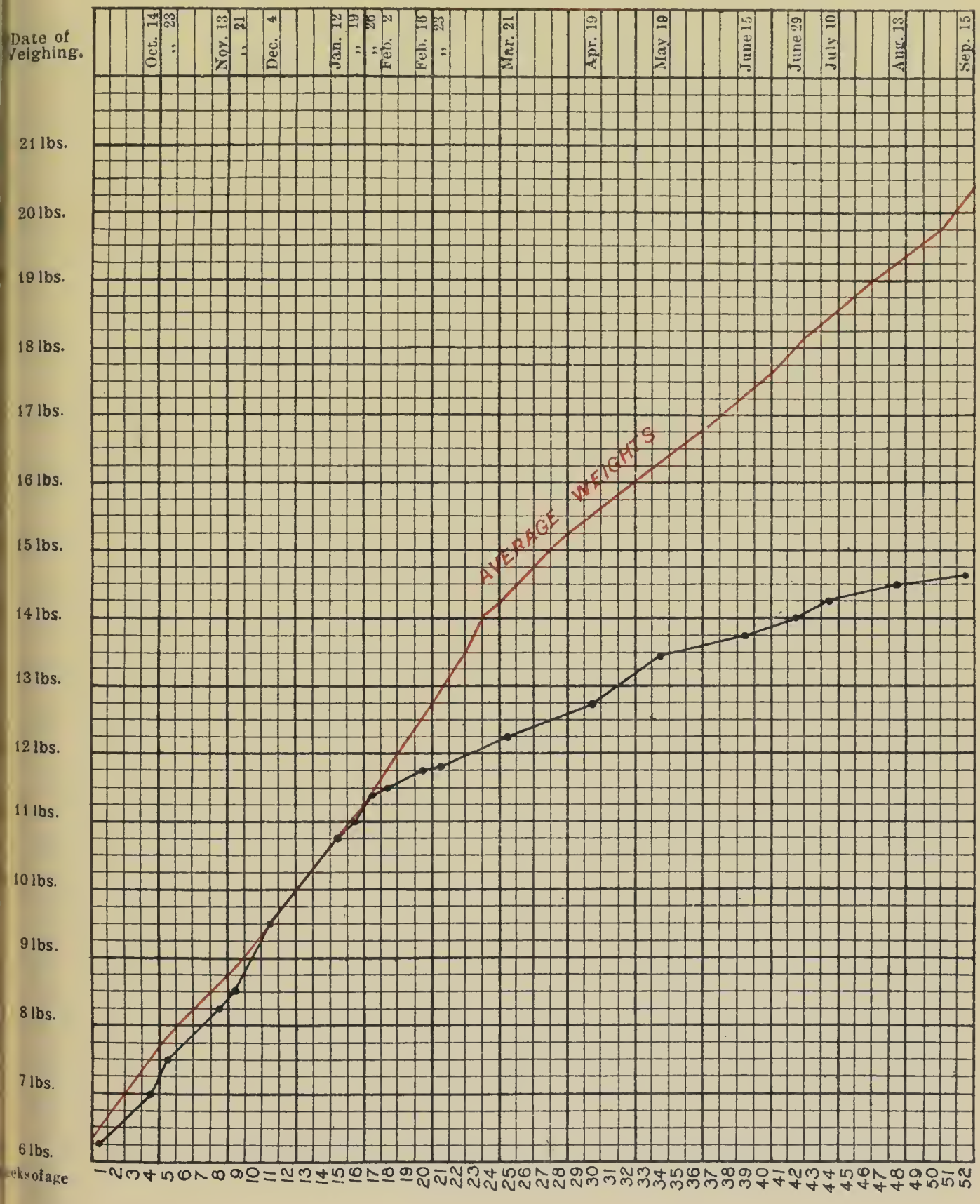
POVERTY.

(D11806)

Name, E. B.

Date of Birth, Sept. 14th, 1908.

Method of Feeding, Breast only.

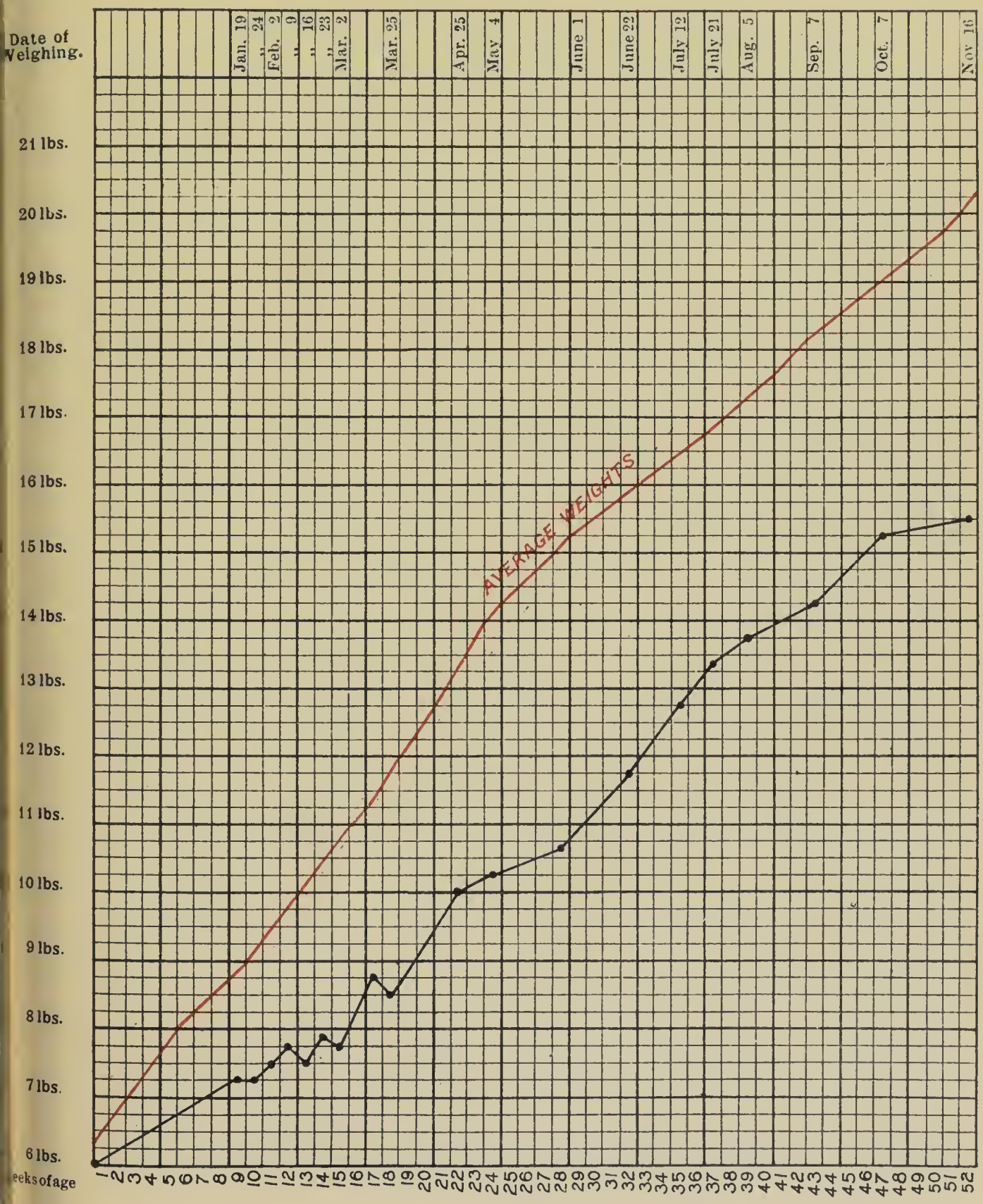


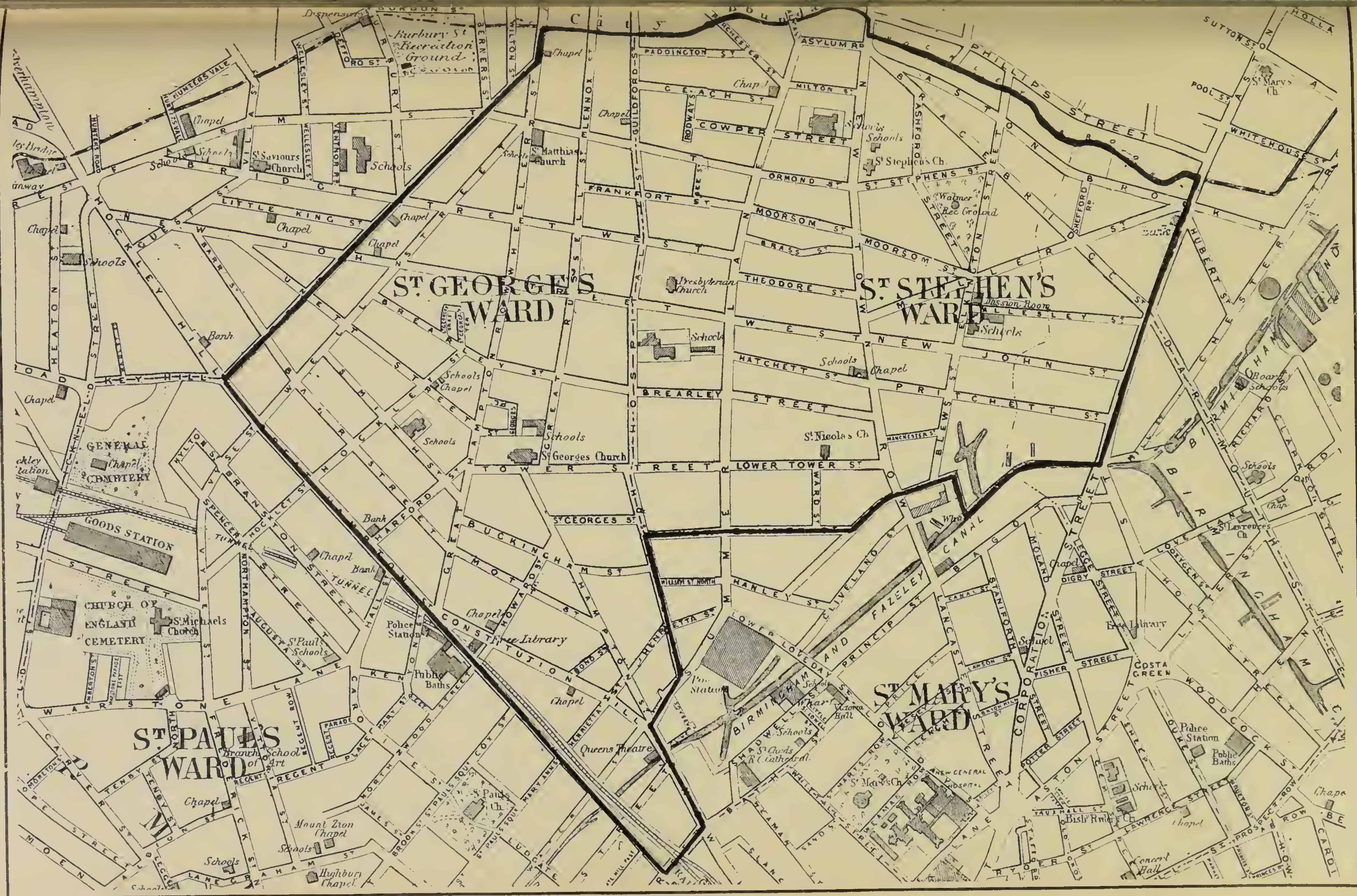
POVERTY.

(D11806)

Name, C. R. Date of Birth, Nov. 14th, 1908.

Method of Feeding, Breast only.




ST. GEORGE'S WARD
ST. STEPHEN'S WARD
ST. MARY'S WARD
ST. PAUL'S WARD
PHILLIPS STREET
ASYLUM RD
PADDINGTON ST
COWPER STREET
ORMOND ST
MOORSOM ST
THEODORE ST
BRASS ST
NEW JOHN ST
HATCHETT ST
PRITCHETT ST
BREARLEY STREET
LOWER TOWER ST
TOWER STREET
ST. GEORGES ST
GUILDFORD ST
LENNOX ST
FRANKFORT ST
ST. STEPHENS ST
ASHFORD
HUBERT ST
WHITEHOUSE ST
SUTTON ST
POOL ST
HOCKLEY HILL
KEY HILL
LITTLE KING ST
GOODS STATION
GENERAL CEMETERY
CHURCH OF ENGLAND CEMETERY
St. Michaels Church
St. Georges Church
St. Matthias Church
St. Saviours Church
St. Stephen's Ch.
St. Nicolas Ch.
St. Marys Ch.
St. Pauls Ch.
Presbyterian Church
Police Station
Public Baths
Free Library
Queens Theatre
School of Art
Mount Zion Chapel
Highbury Chapel
COSTA GREEN
CORPORATION STREET
LANCASTER STREET
MOLAND STREET
DIGBY STREET
FISHER STREET
STANIFORTH
BIRMINGHAM AND FAZELEY CANAL
PRINCIP ST
CLEVELAND ST
HANLEY ST
LOVEDAY ST
HENRIETTA ST
BUCKINGHAM ST
GREAT HAMPTON ST
GREAT HAMPTON ROW
SPENCER ST
NORTHAMPTON ST
AUGUSTA ST
WARSTONE LANE
REGENT PLACE
CAROLINE ST
WOODCOCK ST
DUKE ST
ASTON STREET
PRINCIP ST
Burbury St Recreation Ground
Walmer Rec Ground
Mission Room
Board Schools
Chapel
Schools
Bank

City of Birmingham,

Health Department,

The Council House,

September 25th, 1909.

To the Chairman and Members
of the Health Committee.

Gentlemen,

I beg now to bring before your notice certain additional precautions which I advise should be taken with a view to limiting the spread of tuberculosis. In doing so I have taken the liberty of stating (*a*) certain well-accepted opinions, (*b*) the result of certain observations in Birmingham, and (*c*) a brief outline of what is being done in certain American cities.

By far the greatest source of the infection of tuberculosis is the sputum of persons suffering from phthisis. For practical preventive purposes no other human source of infection need be seriously considered.

Professor Dr. R. Koch, in his address to the Congress in London in 1901, said : "So the only main source of the infection of tuberculosis is the sputum of consumptive patients, and the measures for the combating of tuberculosis must aim at the prevention of the dangers arising from its diffusion." The Congress in question was so impressed with the danger arising from tuberculous

sputum that it passed the following resolution :—"Tuberculous sputum is the main agent for the conveyance of the virus of tuberculosis from man to man : indiscriminate spitting should therefore be stopped." I have not heard of a single dissentient opinion from this.

The sputum of consumptives contains an enormous number of the germs of tuberculosis. These germs, contrary to some results obtained from earlier experiments, are in the majority of instances found to be alive, and capable of resisting the influences of desiccation and exposure for varying periods up to several months.

In view of the infectiousness of this disease to those who are not in a robust state of health, and the amount of material cast about by consumptive patients, such unregulated spitting is an enormous source of danger, and one which some attempt should be made to reduce.

Our present powers are quite insufficient to check the dispersal of infectious sputum.

The existing measures may be briefly summarised as follows :—

All cases of phthisis coming under the care of the Boards of Guardians are compulsorily notifiable. In addition medical men in Birmingham are asked to voluntarily notify private patients suffering from the disease. By these means we get to know of probably 60 or 70 per cent. of all cases of advanced tuberculosis of the lung. When a patient is so notified he is visited and advised as to how to dispose of his sputum, and is warned of the danger of indiscriminate spitting. A great deal of good results:

for many of these patients follow the directions with a view to preventing others from suffering in the same way as themselves.

However efficiently this preventive work is carried out, it but touches the fringe of the general distribution of infection by sputum. It is safe to say that on an average every person suffering from tuberculosis of the lung has been spitting out the living germs of tuberculosis for at least a year before his case is reported. Many patients are careless even after being warned. In addition there are the patients who never come under any instruction.

The result is that at the present time there is a considerable amount of living tuberculous infection strewn broadcast on footpaths and other public places, and in the dwellings of the patients. This sputum is carried on boots and clothing, as well as being pulverised and blown about by wind, and so widely diffused.

That this is so can be easily demonstrated. Dr. Higgins has recently undertaken the examination of spits picked up from the streets of Birmingham by one of the labourers in the employ of the Health Department. The only instruction given to the collector was to collect yellow coloured spits and to use only one sterilised outfit for each sputum, so that no question might arise as to each being free from added infection. One hundred such sputa were examined, gathered from foot pavements in the centre of the city.

Seven per cent. of the spits examined showed the presence of the germs of consumption.

I have had reproduced micro-photographs of two of these spits from foot pavements showing the number of germs in each.

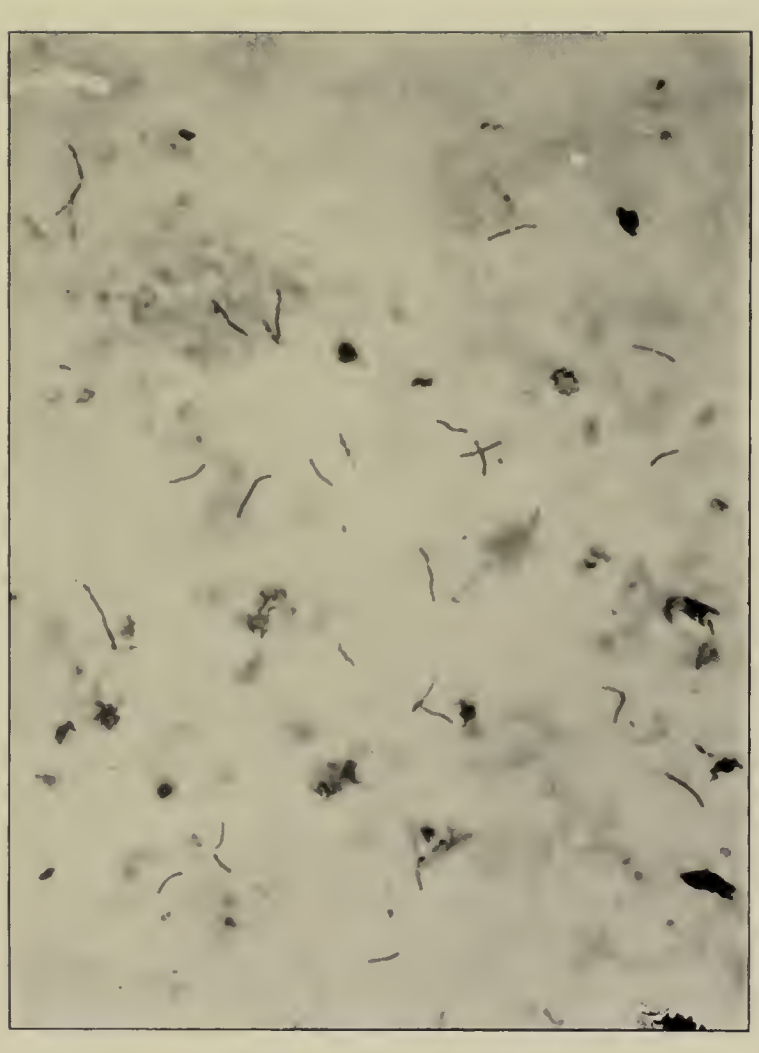
The work which Dr. Higgins has done only confirms for Birmingham what has been found elsewhere and what is the natural sequence to our present unrestricted spitting in public places. In Liverpool Dr. Annett found that 5 per cent. of the spits deposited on the footwalks contained virulent tubercle bacilli.

Such expectoration on footpaths and courtyards may in many cases foul the hands and clothing of little children whose main playgrounds are the streets and courtyards.

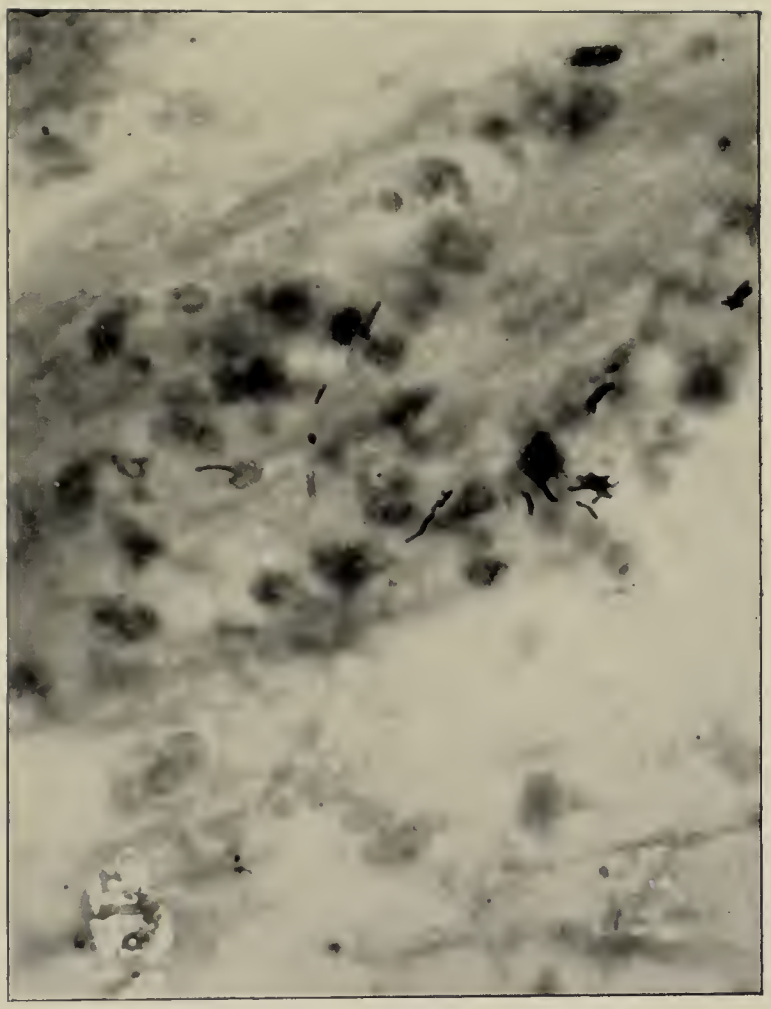
Many investigations have been made into the presence of living tubercle germs in the dust on ledges and shelves in dwelling houses, and the general result has always been that in a majority of the houses where a careless consumptive lived, such dust contained the living germs of the disease, while on the other hand the dust from houses where a careful consumptive lived, or where no disease existed, did not contain the germs of tuberculosis.

From an administrative point of view I do not think it advisable at present to introduce any measure which will single out the consumptive, and make it an offence for him alone to spit on the floors of tramcars, 'buses, theatres, public places, and public footpaths. Probably many other diseases are largely spread by the saliva of persons suffering from them, such as sore throat, influenza, pneumonia, and others.

In addition to the question of actual propagation of disease by indiscriminate spitting, there is the general objection to all spitting on the foot pavements and in the public halls, etc., of a large city. Pavements and other places are strewn with spit; indeed, in Birmingham there



1. Micro-photograph of Sputum from Birmingham Street showing the germs of Tuberculosis as long dark "rods."



2. Micro-photograph of Sputum from Birmingham Street showing groups of Tubercle Bacilli—(as long dark "rods").

are some localities where spitting is so common that the Street Cleansing Department have systematically washed and disinfected them without any suggestion from the Health Department. Such spit gets spread by the boots of pedestrians and taken into houses and offices, where it is dislodged, and may become dust. The dresses of many women, even of those who are careful to try and avoid infection, become contaminated, and if their skirts are brushed in the bedroom it is probable that infection is occasionally carried in this way.

In every street in a large town there is ample accommodation for those persons who really need to spit. Although not an ideally perfect preventive, I would suggest that spitting in the streets be forbidden by bye-laws except in the channels and street gullies.

Apart altogether from the danger from indiscriminate spitting on footpaths, and the general objection to it as a dirty and disgusting nuisance, there still remains to be pointed out that the habit is in 90 per cent. of cases quite unnecessary and probably unwholesome to those addicted to it.

The spitting habit in this, as in other countries, is getting less and less. Within quite recent years every gentleman who smoked was provided with a spittoon. Now such a thing is rarely seen. Among the middle and better classes indiscriminate spitting has almost entirely ceased. It is seldom that women even in the humbler ranks of life are seen spitting in the streets, the habit being almost entirely confined to men, and particularly prevalent among street loungers, hawkers, etc. Very largely, therefore, any regulation would affect a particular class—men who are notoriously careless of the comfort of others.

It should be clearly recognised that certain persons do, by reason of illness, require to spit, *e.g.*, those suffering from bronchitis and other similar complaints, and that reasonable facilities must therefore be allowed. If, however, the limitation I have suggested be adopted I feel that not only would general attention be directed to this dirty habit, but also the phthisical patient would be greatly more careful than at present, while those suffering from other diseases spread from sputum would have their attention drawn to the necessity for care.

Any general attention drawn to this subject will probably have the effect of causing the majority of persons who are now addicted to unnecessary spitting to abandon it altogether.

Already some good work has been done in Birmingham.

1. By a resolution of the Health Committee, dated April 28th, 1903, notices have been attached to a large number of lamp-posts as follows :—

CITY OF BIRMINGHAM.

PERSONS ARE REQUESTED

NOT TO SPIT

ON THE

FOOTWALKS.

By Order of the Health Committee,

The Council House.

2. Somewhat similar notices have been put up in omnibuses and tramcars,

3. At the suggestion of the Health Committee many thousands of notices have been put up in public-houses, factories, workshops, and places of public resort as follows :—

PREVENTION OF

CONSUMPTION

PERSONS ARE REQUESTED

NOT TO SPIT

ON

FLOORS OR WALLS.

JOHN ROBERTSON, M.D.,
Medical Officer of Health.

Health Department,
Council House, Birmingham.

4. Recently the City Council made a bye-law to prevent spitting on the tramcars belonging to the Corporation of Birmingham, of which the following is a copy :—

"6. No person shall spit in or upon any car."

This bye-law would appear to be even more drastic than that suggested above, as it appears to contemplate the prevention of all spitting in tramcars, *e.g.*, even into a spit bottle or pocket handkerchief.

Generally, all over the country, similar notices are made use of, so that considerable attention has been directed to spitting, and as a result it may be fairly said that some reduction has taken place.

In Birmingham, what is known as the model bye-law against spitting in public places has not been adopted. This byelaw is as follows :

> "No person shall spit on the floor, side or wall of any public carriage, or of any public hall, public waiting room, or place of public entertainment, whether admission thereto be obtained upon payment or not."
>
> "Any person offending against the foregoing byelaw shall be liable to a penalty not exceeding £5."

A great many towns and many large counties have adopted such a byelaw. Obviously the scope of the byelaw does not carry us much beyond what is already being done in Birmingham, and unless something better can be added I do not recommend it.

In America, where it is said that the spitting nuisance was at one time particularly obvious to an Englishman, a great deal has been done primarily with a view to limiting tuberculosis, but also as a remedy for the general nuisance.

With the very kind and energetic assistance of A. Halstead, Esq., Consul of the United States, I have obtained a large amount of information from large towns in America. I have been permitted by him to reprint extracts from letters and copies of byelaws. I have had to refrain from reproducing the major part of the information thus obtained on account of its length, and have therefore selected from what appeared to be the most representative towns. There is a unanimous consensus of opinion expressed that the introduction of the regulations has greatly reduced spitting.

1. New York Sanitary Code, Section 178.

SPITTING.

"Sec. 178. Spitting upon the sidewalk of any public street, avenue, park, public square or place in the City of New York, or upon the floor of any hall in any tenement house which is used in common by the tenants thereof, or upon the floor of any hall or office in any hotel or lodging house which is used in common by the guests thereof, or upon the floor of any theatre, store, factory, or of any building which is used in common by the public, or upon the floor of any ferryboat, railroad car or other public conveyance, or upon the floor of any ferryhouse, depôt or station, or upon the station platform or stairs of any elevated railroad or other common carrier, or into the street from the cars, stairs or platforms of the elevated railroads, is hereby forbidden.

"The corporations or persons owning or having the management or control of any such building, store, factory, ferryboat, railroad car or other public conveyance, ferryhouse, depôt or station, station platform or stairs of any elevated railroad or other common carrier, are hereby required to keep permanently posted in each of said places a sufficient number of notices forbidding spitting upon the floors and calling attention to the provisions of this section.

"It is hereby made the duty of every corporation or person engaged in the manufacture of cigars, cigarettes or tobacco, or conducting the business of printing in the City of New York, where ten or more persons are employed on the premises, to

provide proper receptacles for expectoration. Such receptacles are to be in proportion of one for every two persons so employed, and they are to be cleansed and disinfected at least once in every twenty-four hours.

"A copy of the preceding paragraph must be kept posted in a conspicuous place in every factory or printing office mentioned therein."

Violation of the above section carries with it liability to pay a fine of 50 dollars.

Dr. Bensel, Sanitary Superintendent, writes under date June 1st, 1909 :—

"This section of the code is enforced by the summary arrest of offenders wherever found, and has resulted in a remarkable decrease in the spitting habit. Enforcement of a law of this kind can be made effective only by the summary arrest and the immediate fining of offenders in the Police Courts.

"It has not been the policy of the department up to the present time to publish the names and addresses of persons who have been arrested and fined, but I strongly believe that ultimately it will be considered advisable to adopt this means of informing the public of the consequence of violating the spitting ordinance.

"This department has also caused signs to be placed on the stations and in the cars of the elevated railroads and subways, and in all public conveyances, calling attention to the fact that spitting is a misdemeanour, and that offenders are liable to arrest and punishment. These signs have been a great help in preventing spitting."

2. Chicago City Ordinance, Section 1,493. (As amended February 26, 1906. See page 2,772, Council Proceedings.)

"Spitting on sidewalks, etc.—No person shall spit upon any public sidewalk or upon the floor of any public conveyance or of any theatre, hall, assembly room, public building, or building where any considerable number of people gather or assemble together.

"Every person, firm, or corporation owning or operating any public conveyance for the transportation of passengers within the city, and every corporation or person owning, leasing or conducting any such building within the city limits shall cause to be posted and kept posted at all times in a conspicuous place within said public conveyance or building a suitable sign or placard bearing the following legend and no other: 'Spitting is prohibited upon sidewalks or buildings where any considerable number of people gather or assemble together, and in all similar places.

"'Offenders are liable to arrest and fine under an ordinance of the City of Chicago.'

"Said signs or placards shall be uniform in size and typography with the standard sign or placard to be seen in the office of the Commissioner of Health.

"Such a sign or placard shall also be posted and kept posted upon the outside of all patrol boxes within the city limits.

"It shall be the duty of every member of the police force to enforce the provisions of this ordinance.

"Every person violating the provisions of this ordinance shall, upon conviction, be fined in a sum of not less than one dollar, nor more than five dollars."

The Chief Medical Inspector, in forwarding the above says :—

"This ordinance has been vigorously enforced for a week at a time, upon several occasions—arresting all seen spitting on sidewalks or floors of street and elevated cars. Then the enforcement was allowed to become lax and only flagrant violations were noticed. At all times the police will arrest violators of the ordinance, but at stated times orders have been issued to the police to make a special effort to find and arrest violators of the ordinance.

"These spasmodic raids upon the spitters have had a decided beneficial effect. Prominent citizens were arrested, and the papers gave much publicity to the cases, and the people have thus learned that they are liable to arrest for spitting. From my own observations, I should say there is not one-hundredth part as much spitting in public places as there was previous to these spasmodic enforcements of the law. The habits of the people have much improved under this imperfect method of enforcement of law. A continuous, vigorous enforcement would practically end the spitting nuisance."

3. Philadelphia City Ordinance, March 9th, 1903:

"Section 1. The Select and Common Councils of the City of Philadelphia do ordain that from and after the passage of this ordinance expectorating upon the side walks of the City, on the floors and passageways of public buildings, on the floors of public conveyances conveyed by steam, electricity or otherwise, on the floors of theatres, railroad stations and other indoor places resorted to by the public, is declared to be a nuisance, prejudicial to the health of the City and is prohibited.

"Section 2. Any person violating this ordinance shall be subject to a penalty of one dollar, to be recovered as debts of like amount are now by law recoverable, and it shall be the duty of the Department of Public Safety to cause this ordinance to be enforced."

4. San Francisco City Order, No. 3,063.

"Section 1. No person shall expectorate on the floor of any public building or on any side walk in this City and County.

"Section 2. It shall be the duty of the Committee on Public Buildings to furnish a sufficient number of suitable receptacles for the reception of sputum, and cause the distribution and maintenance of the same in public buildings at such locations as may be deemed advisable to afford necessary convenience and accommodation.

"Section 3. Any person violating any of the provisions of this Order shall be deemed guilty of a misdemeanour and be punished by a fine not

exceeding 25 dollars, or imprisonment not exceeding ten days, or by both such fine and imprisonment."

Dr. R. G. Brodrick, of the Department of Public Health of San Francisco, writes :—

"I have to state from my personal observation that the anti-expectoration ordinance is very well observed in this city, and that it rarely happens that it becomes necessary to enforce these regulations by arrest of offenders, as the general public appears to be amenable to the provisions of this regulation."

5. Baltimore Anti-Spitting Law, February 21, 1905 :

EXPECTORATING.

"*Ord.* 16, *March* 3, 1898.

"*Ord.* 201, *February* 21, 1905.

Expectoration on sidewalks, in public building, cars or depots prohibited.

"101. It shall not be lawful for any person to expectorate or spit in or upon any paved sidewalk or footpath of any public street, avenue or public square in the City of Baltimore, or in or upon any part of any public building under the control of the Mayor and City Council of Baltimore, or upon the floor, platform, or steps of any street railway car or public vehicle carrying passengers for hire, or upon the floor of any depôt or station or upon the station platform or stairs of any elevated railroad or other common carrier, or upon the floor or steps of any theatre, store, factory, or any building which is used in common by the public, or upon the floor of any hall or office, in any hotel, or lodging house which is used in common by the guests thereof.

"*Ord.* 201, *February* 21, 1905.

Notices forbidding same to be posted.

"102. The corporations or persons owning or having the control of any such street railway cars or public vehicles carrying passengers for hire, theatres, stores, or buildings which are used by the public in common, depôts, stations, station platforms or stairs of any elevated railroad or other common carrier, hotel or lodging-house shall keep permanently and conspicuously posted in each of said places, a sufficient number of notices forbidding spitting upon the floors, and calling attention to the provisions of the next preceding section.

"*Ord.* 201, *February* 21, 1905.

Provide receptacles.

"103. The corporations or persons owning or having the management or control of such theatres, stores, factories, or buildings which are used by the public in common, depôts, stations, station platforms or stairs of any elevated railroad or other common carrier, hotels and lodging houses, shall provide sufficient and proper receptacles for expectoration, and also provide for the cleaning and disinfection of said receptacles at least once every twenty-four hours.

Clean and disinfect same.

"*Ord.* 201, *February* 21, 1905.

Penalty.

"104. Any person violating any of the provisions of the three next preceding sections of this article shall on conviction thereof, be fined in any sum not less than one dollar ($1) and not more than five dollars ($5) for the first offence, and in any sum, not less than five dollars ($5) and not more than ten dollars ($10) for each and every subsequent violation of the provisions of said three sections."

The Commissioner of Health for Baltimore states :—

> "In reply it gives me pleasure to submit a copy of our law and to say that it has resulted in much good, both in its enforcement and in its educational effect upon the people. It is impossible, however, to say how much good has been accomplished by it as far as the lessening of tuberculosis is concerned, but it is quite evident that the enforcement of any law which has as its object the lessening in the amount of distribution of tuberculous pus, must have eventually some effect in the lessening in the number of cases of tuberculosis."

Somewhat similar regulations have been obtained from

(6) BOSTON.

The Chairman of the Health Department writes :— "Our street cars are absolutely free from the spitting habit. Our markets are almost as free, the street railway stations are very greatly improved, the public buildings, halls, theatres, and adjacent sidewalks are also very greatly improved."

(7) PITTSBURG.

Here it is said that "a very great improvement in conditions since the passage of the law has been noticed. There is much less spitting on the side walks, expectoration is noticeably less also in the street cars, and in public buildings." "We feel that the law has been a beneficial one."

(8) WASHINGTON.

The Secretary of the Board of Commissioners writes : "The moral effect of the passage of this regulation is excellent."

(9) BUFFALO.

The acting Health Commissioner states that "The agitation against indiscriminate expectoration is already bearing fruits."

(10) MILWAUKEE,

where it is stated that the result has been most gratifying, and the habit of spitting on the sidewalks in Milwaukee is practically a thing of the past.

(11) ATLANTA.

The spitting ordinance has never been strictly enforced, but the Health Officer is satisfied that it has greatly lessened spitting in public places.

(12) SPRINGFIELD (MASS.)

"The Police Department experience no difficulty in securing convictions under the law. Public opinion has undoubtedly been a potent factor in the great improvement in the condition of our streets and public places in recent years."

Similar information has also been obtained from :—

(13) St. Louis, Missouri.
(14) New Orleans.
(15) Cincinnati, O.
(16) Cleveland.

I beg, therefore, to recommend to your favourable consideration the making of a byelaw to be enforced by the police to prevent spitting on all public foot pavements and courtyards within the city, spitting being allowed into the street channels and gullies only.

If you decide to make such a regulation it is worth while considering whether the model byelaw dealing with spitting in public halls, etc., printed on page 8 of this report, should not at the same time be adopted.

In conclusion, I would urge that what is to be aimed at is the limitation of spitting on streets, etc., by consumptives who are in an infectious condition. In doing this it appears to me that the opportunity should also be taken of reducing at the same time the unwholesome and dirty habit of promiscuous spitting on our foot walks.

I am, Gentlemen,

Your obedient servant,

JOHN ROBERTSON.